

C. 2
Chilton's

MOTOR AGE

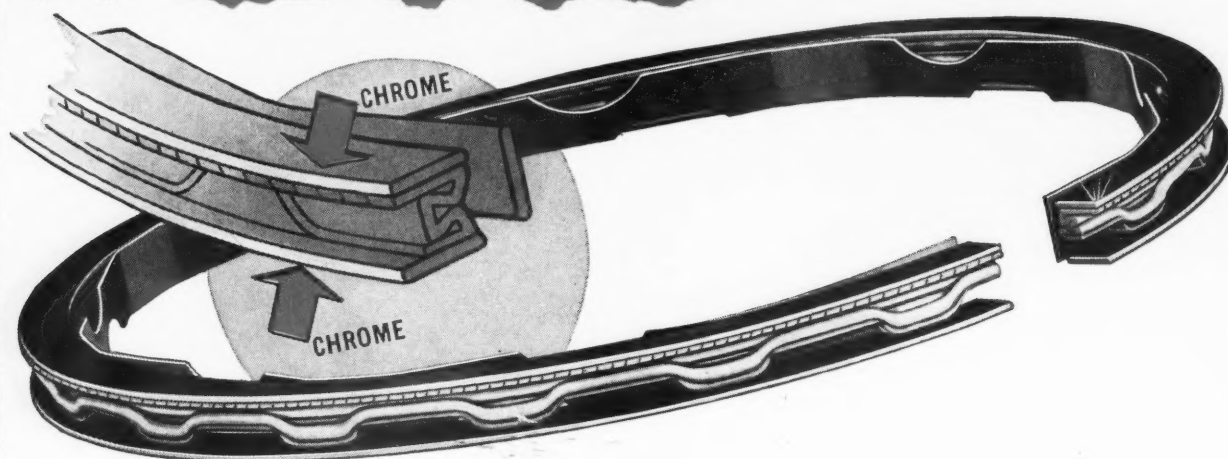
FEBRUARY 1950



This Issue:

Servicing the DYNAFLOW Transmission

**HASTINGS USES CHROME
WHERE IT DOES THE MOST GOOD
... ON THE OIL CONTROL RING!**



THE CHROME-FACED STEEL-VENT FOR HEAVY DUTY USE

No set of piston rings is ever better than its oil ring. Compression rings just can't function after the oil ring is worn out.

So Hastings gives you chrome-plating where it is most needed—on the oil control rings!

The Chrome-Faced Steel-Vent and its companion ring, the Chromlube, are doubling and tripling expected life of piston ring sets under some of the most

difficult operating conditions in the heavy duty field. Two years actual field experience prove this.

For longer life, greater resistance to scuffing and less cylinder wall drag, install a Hastings Chrome Set. Available for nearly all trucks and tractors and for 16 passenger cars.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto

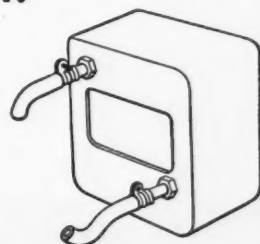
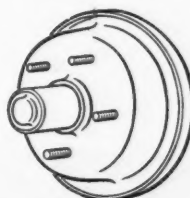
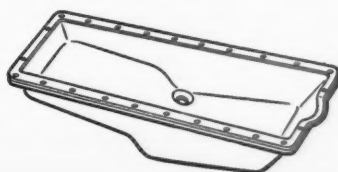
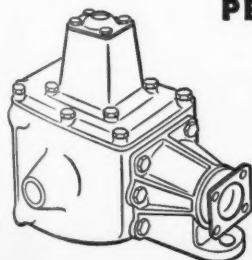
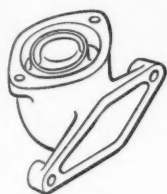
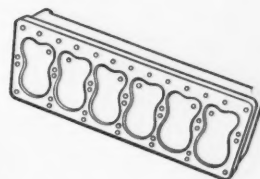
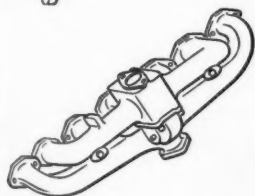
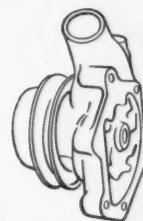
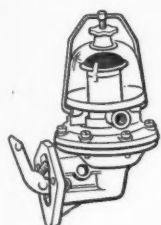
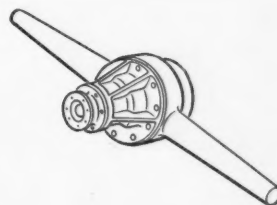
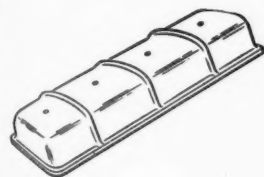
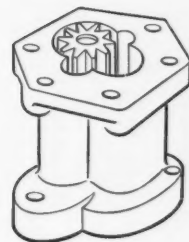
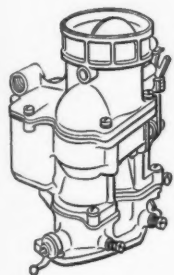


HASTINGS **STEEL-VENT**
PISTON RINGS

CHROME-FACED FOR HEAVY DUTY SERVICE

ASSEMBLE

with
Form-A-Gasket



Form-A-Gasket No.1, Fast Drying Paste . . . Hard Setting
Form-A-Gasket No.2, Non-Hardening Paste . . . Remains Pliable
Aviation Form-A-Gasket, Heavy Liquid . . . Remains Tacky
If It's Assembled With Form-A-Gasket, It's Leakproof!

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

America's Greatest Oil Salesman on America's

NO. 1 TV SHOW!

☆ Now in its second season . . . bigger and better than ever . . . none other than the Texaco Star Theater on television . . . No. 1 in popularity!

Milton Berle, now known as "Mr. Television," is master of ceremonies, and what a man! He clowns his way through a sparkling weekly parade of famous guest stars.

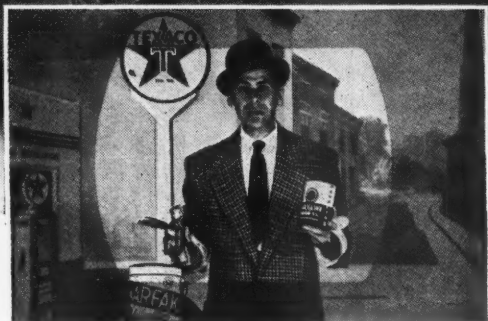
This great show is now televised over 35 stations from coast to coast. Right now—an audience of more than 7 million anxiously awaits Tuesday nights. And the Texaco audience grows in leaps and bounds as the installation of new sets goes on at a rate of more than 150,000 each month.

The Texas Company backs its Texaco Dealers with top promotion . . . television . . . Metropolitan Opera broadcasts . . . magazine and outdoor advertising . . . window displays . . . direct mail . . . and other numerous dealer helps.

THE TEXAS COMPANY



MILTON BERLE,
"Mr. Television" himself



SID STONE and his familiar Texaco backdrop have won for Texaco the highest sponsor identification ever recorded by any show—radio or television.

**Now—TEXACO STAR THEATER TELEVISED
FROM 35 METROPOLITAN AREAS!
Every Tuesday Night**

Atlanta	Erie	Omaha	Seattle
Baltimore	Fort Worth	Philadelphia	Toledo
Boston	Houston	Pittsburgh	Utica
Buffalo	Indianapolis	Providence	Washington
Chicago	Lancaster	Richmond	Wilmington
Cincinnati	Los Angeles	Rochester	
Cleveland	Milwaukee	St. Louis	
Columbus	New Haven	St. Paul	
Dayton	New Orleans	San Francisco	
Detroit	New York	Schenectady	



*No wonder TEXACO DEALERS
are such busy dealers!*

**A Great Line-up for
TEXACO DEALERS**

Sky Chief and **FIRE-CHIEF** GASOLINES
HAVOLINE and TEXACO MOTOR OILS MARFAK CHASSIS
LUBRICATION • P T ANTI-FREEZE • REGISTERED REST ROOMS

MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

Reg. U. S. Pat. Off.

for AUTOMOTIVE SERVICEMEN

Vol. LXIX, No. 3

February, 1950

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Los Angeles 1, Cal.—6000 Miramonte Blvd., Phone Lafayette 5525. Member
of Audit Bureau of Circulation. Subscription Price: United States and Possessions, Latin-American Countries, \$3.00 per year; Canada and foreign
\$5.00 per year. Single copies, 40¢.

One of the Publications Owned by

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MOTOR AGE, Vol. LXIX, No. 3. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries \$3.00 per year. Canadian and foreign \$5.00 per year; single copies, 40 cents.



"More dealers reline
with Raybestos
than with any
other
brake lining"

That's right. Raybestos is America's biggest selling brake lining. Here's why: Raybestos PG Sets provide dealers with the right combination of linings . . . selected from seven different types . . . for each make and model of vehicle. They are *proving ground tested* . . . and each set is rigidly inspected during manufacture. And Raybestos constantly backs up the dealer's selling effort with full factory cooperation.



Raybestos

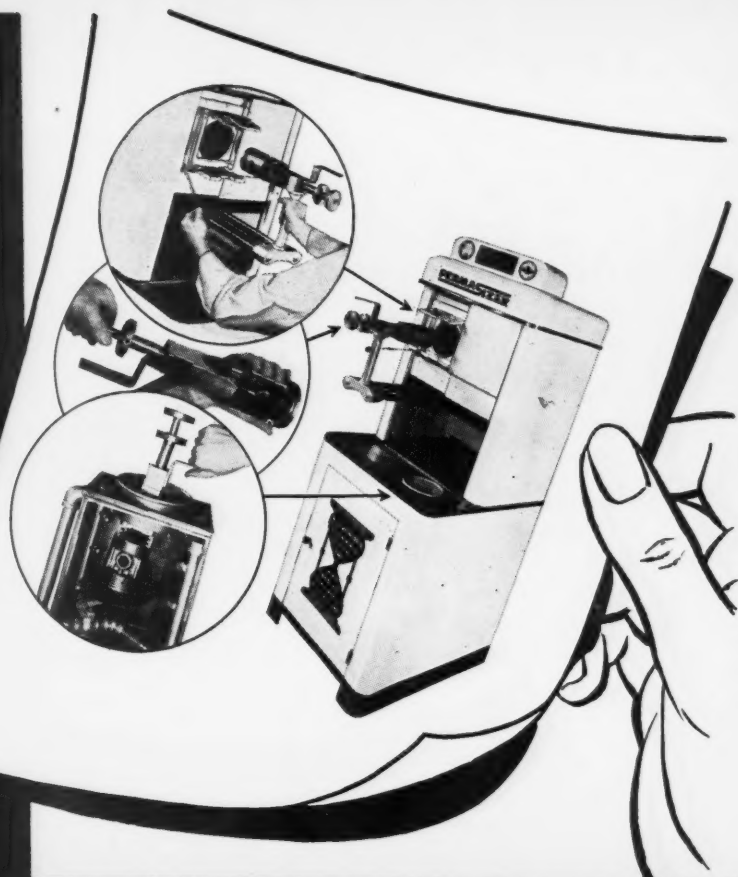
The Raybestos Division of RAYBESTOS-MANHATTAN, INC., Bridgeport, Conn.

America's Biggest Selling BRAKE LINING



RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Shoes • Clutch Facings • Radiator Hoses • Fan Belts • Mechanical Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

**How to make
more money
for Yourself
and do a
better job
for your
Customers!**



The New **McQUAY-NORRIS** **PERMASIZER**

A NEW REVOLUTIONARY METHOD OF RESIZING PISTONS

Only your McQuay-Norris jobber has the Permasizer. He can give you quick, efficient service and help. Ask him for details. It's to your advantage.



- | | |
|---|---|
| 1 More permanent and accurate resizing | 5 Does not artificially build up stress in piston skirt |
| 2 All pistons in a set uniformly expanded | 6 Resizes aluminum, iron and steel pistons |
| 3 A heat expansion and reshaping process | 7 Restores original shape and cam |
| 4 Uniform expansion with pressure exerted independently against top and bottom of skirt | 8 Does not deface surface of piston nor swedge metal |

**IT'S QUICK — IT'S ECONOMICAL
... IT'S A MONEY-MAKER!**



**McQUAY-NORRIS MANUFACTURING COMPANY
ST. LOUIS 10, MO.**

USE *Genuine* **HARRIS**

RUBBER BUSHINGS

AT THESE

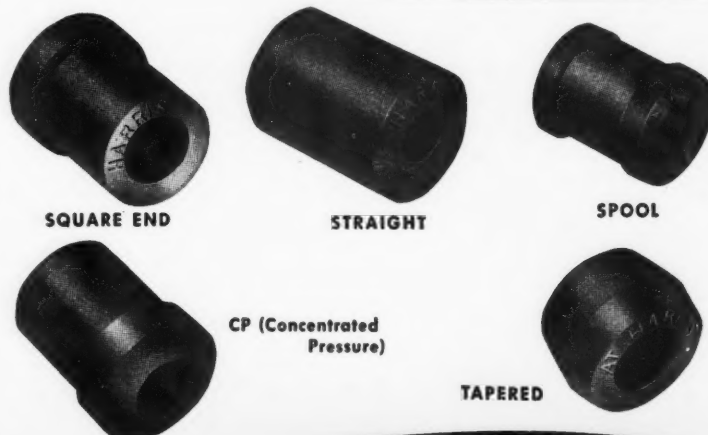
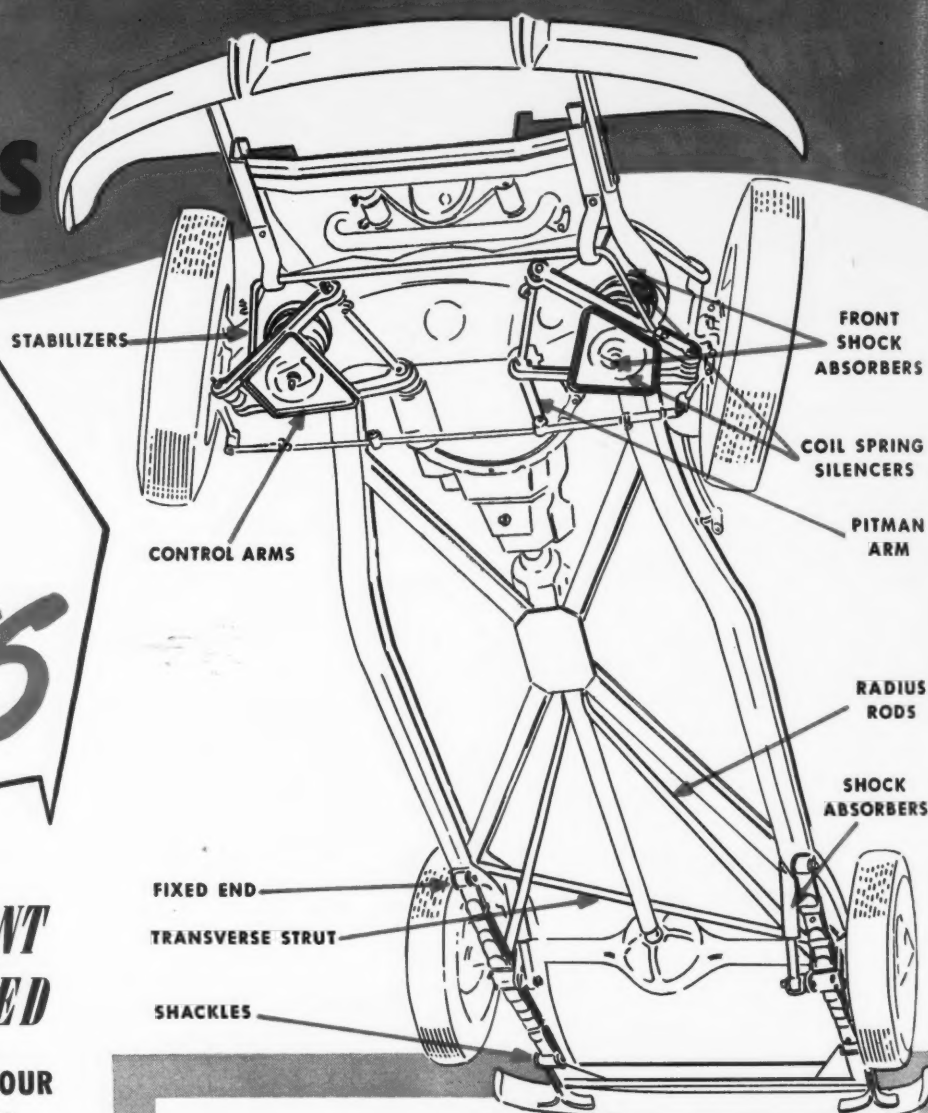
**VITAL
POINTS**

**ORIGINAL EQUIPMENT
FACTORY APPROVED**

**THE NAME "HARRIS" IS YOUR
GUARANTEE OF QUALITY**

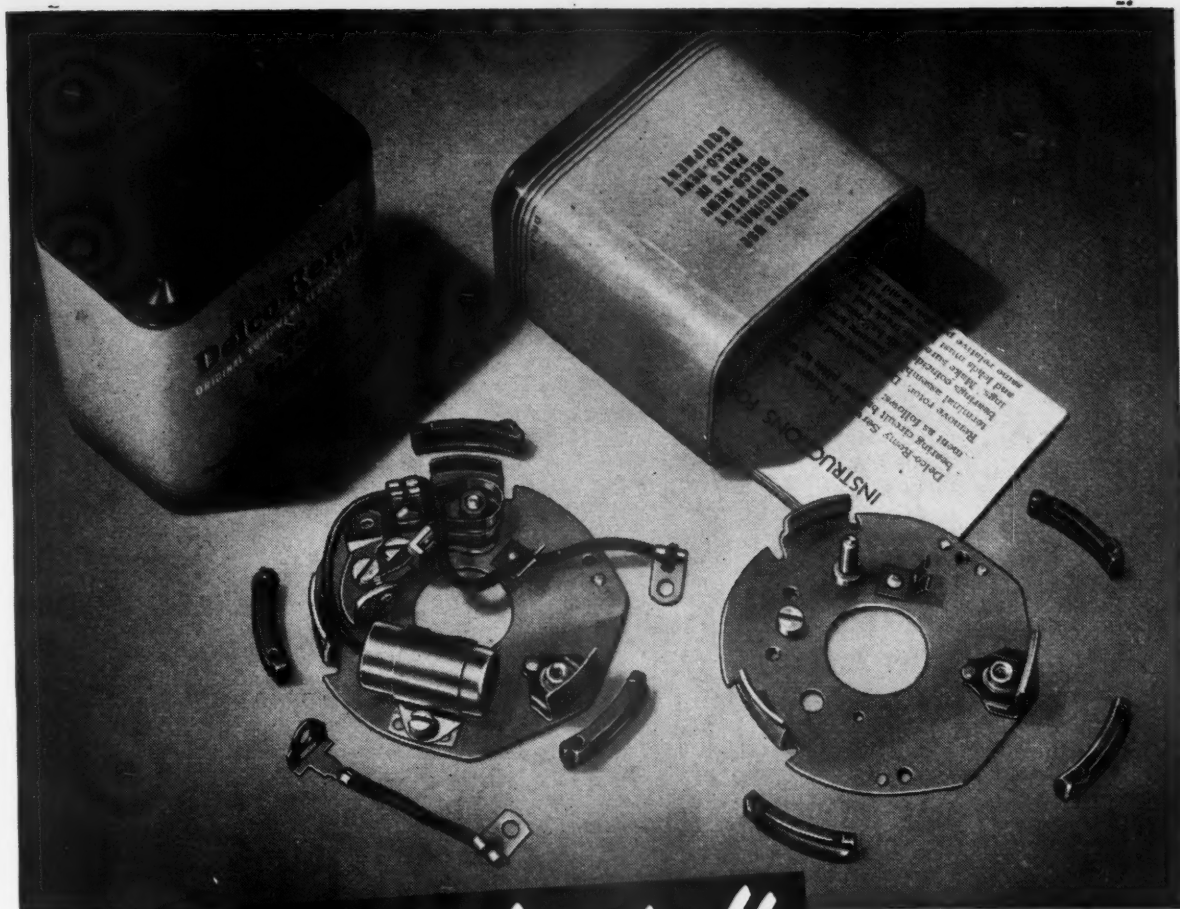
Harris-designed bushings are used on every car manufactured in America. They are manufactured only from top quality rubber, scientifically compounded to the exact requirements of each application. They take maximum loads and shocks without failure. Genuine Harris rubber bushings are stocked by all leading jobbers.

IT IS NOT A
GENUINE
HARRIS BUSHING
UNLESS IT IS MARKED:
"HARRIS"



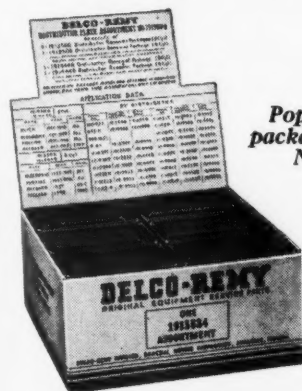
HARRIS PRODUCTS COMPANY

GENERAL MOTORS BUILDING • DETROIT 2, MICHIGAN
MAIN OFFICE AND FACTORY: 1929 EAST 61st STREET • CLEVELAND 3, OHIO



Easy to Install

DELCO-REMY DISTRIBUTOR RENEWAL PACKAGES



*Popular renewal
package assortment
No. 1915884*



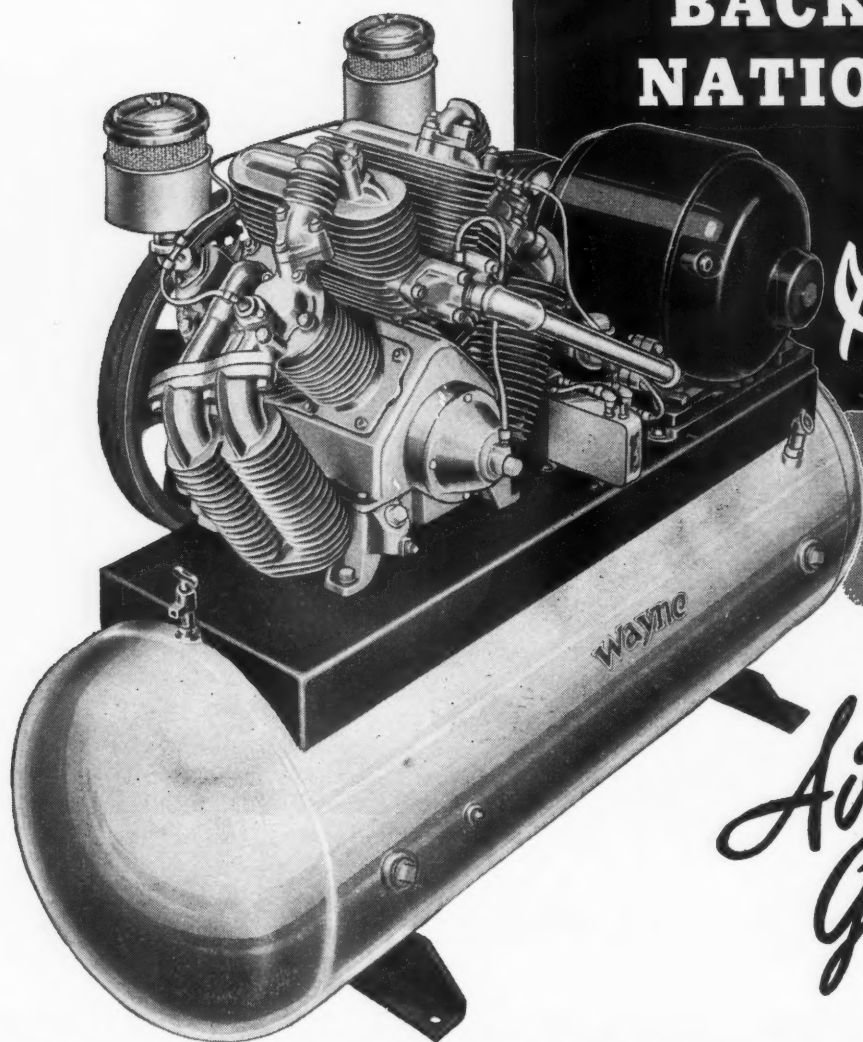
DELCO-REMY—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

You can be sure of satisfactory performance and of satisfied customers when you service Delco-Remy distributors with these genuine Delco-Remy renewal breaker plates — now packaged for your convenience. They are easy to install without special tools and, because they are Delco-Remy built to original equipment specifications, they are bound to fit.

Delco-Remy packaged distributor renewal breaker plates fit scores of six- and eight-cylinder models, cars and trucks, both old and new. Order the popular assortment containing six packages — four breaker plates with contact points, condenser and molded bearings, assembled; two breaker plates with molded bearings only. Get your supply today — through your UNITED MOTORS DISTRIBUTORS.

Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN



**BACKED BY
NATIONWIDE**

Service!
6

**WAYNE
PACKAGED**
Units of Power

*Air Needs
Growing?*

RUGGED POWER FOR INCREASED LOAD

PROFITABLE APPLICATIONS of compressed air in the garage and service station are increasing almost daily. As a result, most air compressors are overloaded. If your present air compressor runs too frequently, you need a larger unit. It will pay you to replace it now with a Wayne. These "packaged units of power" are available in many sizes and types ranging from $\frac{1}{8}$ H.P. to 10 H.P. They are ruggedly built for long life and low maintenance expense. Modern design assures greater air delivery at lower cost for current. Use the coupon now!



WRITE FOR CATALOG TODAY

**THE WAYNE PUMP COMPANY, FORT WAYNE 4, INDIANA
504 TECUMSEH STREET**

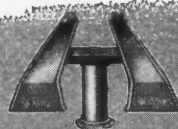
Please send us without obligation ☐ Catalog of Wayne Air Compressors; ☐ Folder on Wayne Single- or Two-Post Hoists; ☐ Hose Reel Bulletin; ☐ Folder on Car Washers; ☐ Bulletin on Air Scales.

NAME _____

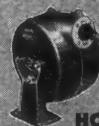
ADDRESS _____

CITY _____

STATE _____



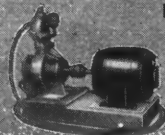
WAYNE LIFTS



HOSE
REELS



AIR
SCALES



CAR WASHERS

MOOG FULL POWER

The Winning Combination



© 1950 M.I.I.

Stops **COSTLY COMEBACKS**

Winning teams have the right combination that insures Full Power performance. Use the right combination to get a Full Power motor reconditioning job—Moog X-Plus Piston Rings installed on pistons dynamized by the Moog Dynamizer.

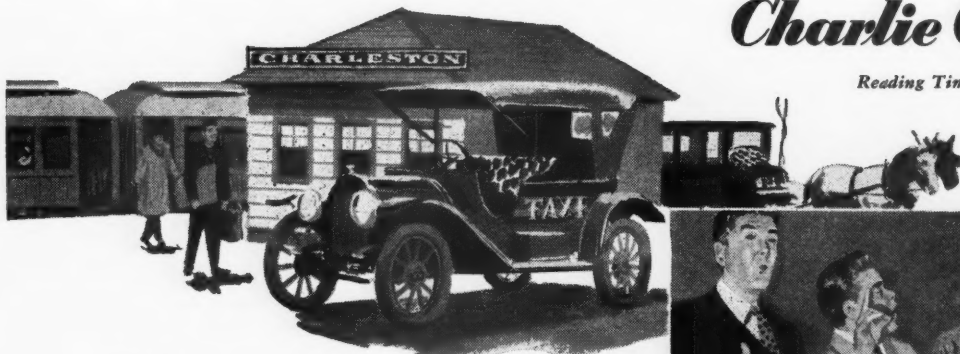
MOOG PISTON RING CO., ST. LOUIS 14, MO.

Division: MOOG INDUSTRIES, INC.

You've Got to Give to Get

Charlie Claims

Reading Time: 1 min., 48 sec.



Thirty odd years ago, much of America's "personal transportation" depended upon the speed and endurance of horses. This was especially true in the small Midwest community where Charlie was born . . . and still lives. But Charlie was progressive. He liked automobiles. At twenty, he was driving a taxi and wondering where that would take him. He didn't yet realize what the quick, efficient service of automobiles was going to mean everywhere.

The busier Charlie got, the more he thought about the growing need for this type of transportation. His passengers, too, often spoke of the coming days when they hoped to have cars of their own. "Um-m," mused Charlie, "Why wouldn't automobiles be a good business for me?" And suiting the action to the thought, he went to see a local automobile dealer who figured that Charlie ought to make a star salesman.



"It didn't take long to see that there's where I belonged," Charlie recalls, "for I made more money than ever I dreamed of as a taxi driver . . . and I saved it, too! Some years later, when the first Chrysler cars were introduced in 1924, I scraped the very bottom of my financial barrel to qualify as a Chrysler dealer in my own right. I'd learned how to run the business pretty well, and I guess my record as a salesman helped when I talked with the Chrysler sales executives.

"I've been selling and servicing Chrysler and Plymouth cars ever since. It's been a pleasant and productive quarter century. In our community of 15,000, a merchant gets to know folks mighty well. We not only work but play together."

Charlie tells of his long friendship with a leading grocer, a college



professor and the owner of a clothing store who joined with him to form a "barber shop" quartet. They sang at social affairs all over the county "just for the fun of it" and only recently disbanded after 30 years of "closest harmony."

Charlie doesn't tell of his patriotic work during the anxious war years when the citizens of his town



drafted him as Mayor and Municipal Judge. But his story is a good example of why America has become great. There are hundreds of such closely-knit communities where business men who serve their neighbors well have prospered. Such men make their own careers, and serve to strengthen our nation.

Write for our free booklet containing a number of these stories of accomplishments by enterprising men. Chrysler Corporation, 341 Massachusetts Ave., Highland Park 3, Michigan.



Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS
Fine Cars of Great Value

Let's Talk

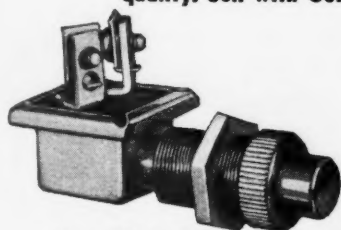
ABOUT *Quality*

& ITS RELATION TO YOUR SALES

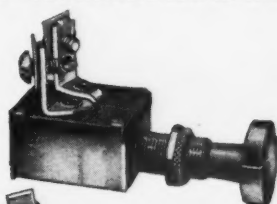


COLE-HERSEE makes the finest switches you can sell!

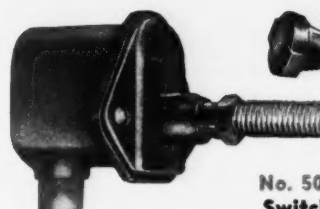
Cole-Hersee replacement switches meet the specific requirements of leading manufacturers and are constructed to SAE standards. They are original equipment. Guaranteed for Quality and Ruggedness, Engineered for Performance and Dependability, the name Cole-Hersee is your assurance of top quality. Sell with Confidence—Sell Cole-Hersee. Remember, customer satisfaction means continuous sales.



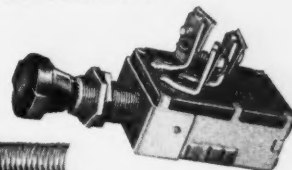
No. 9044 Push
Button Dust-
proofed Starter
Switch



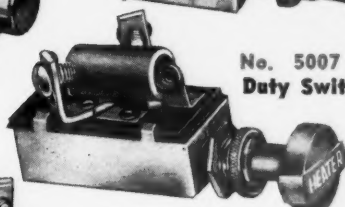
No. 5007 Heavy
Duty Switch



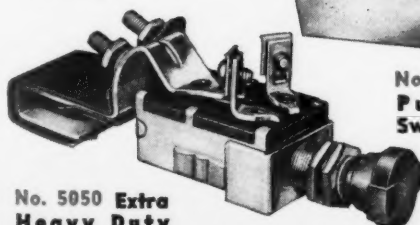
No. 1180 Trailer Con-
nector Box and Grip-
tite Cable Protector



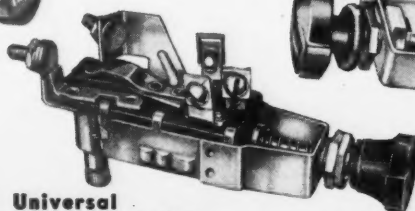
No. 5027 Extra Heavy Duty
Switch



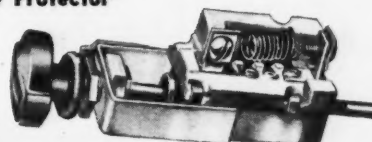
No. 6896 Push-
Pull Heater
Switch



No. 5050 Extra
Heavy Duty
Switch with
Circuit Breaker



No. 7123 Universal
Heavy Duty Headlamp Switch



No. 6887 Push-Pull
12 volt Heater
Switch

COLE-HERSEE CO.

20 Old Colony Ave., Boston 27, Mass.

Headlamp Switches
Panel Switches
Plugs & Sockets
Door Switches

Manufacturers of
Starter Switches
Trailer Connectors
Push-Pull Switches
Pilot Lights

Heater Switches
Toggle Switches
Foglight Switches
Fuses Blocks

Wagner

national advertising
in the POST
and Collier's
develops business
for YOU!



It pays to be identified with Wagner Lockheed—the best known name in brake service products.

Year after year Wagner has run colorful half-page ads in the Saturday Evening Post and in Collier's. (One of these ads, running currently, is reproduced in miniature at the right.) These two great national magazines have a combined circulation of over 7 million copies per issue, and a readership of more than three times as many millions.

Many of the people who see the Wagner ads are *YOUR* customers. They live in your neighborhood—they drive in and out of your place of business. Cash in on this great promotional program.

You'll find Wagner a great name upon which you can build a profitable business. See your Wagner jobber today. Find out how convenient and advantageous it is to get *all* your brake service products from *one* source. There's a jobber near you who can supply the complete line of Wagner Lockheed Hydraulic Brake Parts and Fluid, and Wagner CoMaX Brake Lining in every type and size you need . . . Ask him, or write us, for a free copy of Wagner Catalog AU-500.

Wagner Electric Corporation

6498 Plymouth Avenue, St. Louis 14, Mo., U. S. A.

1120-6



Are YOUR brakes safe?

Remember the warning of the National Safety Council—
"The life you save may be your own!"

	YES	NO
1. Do your brakes "grab" or "squelch" when you stop?	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the pedal feel "spongy" when you apply the brakes?	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the pedal "creep away" from your foot at a holding stop?	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you have to "pump up" your brakes when you stop?	<input type="checkbox"/>	<input type="checkbox"/>
5. Does your pedal almost touch the floor when you stop?	<input type="checkbox"/>	<input type="checkbox"/>
6. Does your car "pull" to either side when you brake it?	<input type="checkbox"/>	<input type="checkbox"/>

If you answer "yes" on any point
...play safe...have your brakes
checked now! If replacements
are needed, for safety's sake
specify...

Wagner Lockheed

HYDRAULIC BRAKE PARTS and FLUID and CoMaX BRAKE LINING

You can depend upon Wagner quality because Wagner products are used as original equipment by automobile, truck and trailer manufacturers.

You can get brake service—where Wagner products are used—in your neighborhood. If you don't know where... write us.

Wagner Electric Corporation

6400 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
In Canada: Wagner Brake Company Limited, Toronto



EST. 1901



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID...MoReL...CoMaX
BRAKE LINING...AIR BRAKES...TACHOGRAPH...ELECTRIC MOTORS
...TRANSFORMERS...INDUSTRIAL BRAKES

* You can depend on Wagner quality because Wagner products are used as original equipment by automobile, truck and trailer manufacturers.

SELF-CONTROL STARTS HERE



AND TO RESTORE
ENGINE PERFORMANCE

OIL-CONTROL STARTS HERE

To Stop Oil-Pumping, Replace Worn Engine Bearings

When an engine is sluggish on pick-up and always seems to drag that means oil pumping—and oil pumping means worn connecting rod and main bearings. Worn engine bearings let excess oil reach combustion chambers. It burns to motor fouling carbon on pistons, spark plugs, valves and rings. The best of new rings can't control oil pumping caused by

worn bearings. Correction starts where the trouble starts. Always check for and replace worn bearings. To restore power, pep and economy, replace in sets with Federal-Mogul Oil-Control Bearings. They are engineered for the job!

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN



control oil-pumping where it starts—REPLACE WITH

FEDERAL-MOGUL

OIL CONTROL

BEARINGS

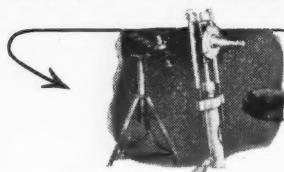
ONLY **Porto-Power**[®] pays profits in all departments

ONLY **Porto-Power**

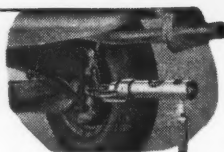
serves the full range of
**REBUILDING AND
RECONDITIONING**

ONLY **Porto-Power**

licks these and other tough
REPAIR JOBS



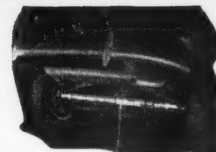
Pull passenger car and truck spindle pins with a portable Porto-Power press.



Remove and insert Ford shackle studs. No hammering, bending or clipping.



Pull wheel hubs without harmful knocking or damage to threads, bearings.



Spread springs — one of many Porto-Power services in repair work.

ONLY **Porto-Power** GIVES YOU ALL THIS

It's extremely important that you make "Porto-Power" your choice. Blackhawk alone gives you the range and features to answer every vital need for hydraulic service equipment. Because only "Porto-Power" serves your entire shop . . . it adds up that it is *unmatched* by any other hydraulic equipment. Let your Blackhawk Jobber show you why "Porto-Power" is your best bet. *Blackhawk Mfg. Co., Dept. P620, Milwaukee 1, Wis.*

"Porto-Power" is the Exclusive (Trade Name Registered) Product of

BLACKHAWK

WATCH FOR
ANNOUNCEMENT

of important new
"Porto-Power"
developments!



THE "PORTO-POWER" LINE IS ALL THIS AND MORE

Portable Stands and Presses

5 Hydraulic Units in 2, 7, 10, 20 and 50-ton capacities

Scores of time-saving attachments

Specialized Hydraulic Rams

Spec-D-Couplers — permit range of rams to be served by one pump

Rack-Rack — for rigidly holding body sections



You Can't Miss

WITH

PACKARD AUTOMOTIVE CABLE

PACKARD CABLE— Tops for Every Requirement

LOW TENSION CABLE—The new and improved Packard low tension cable gives definitely superior performance . . . is tougher . . . lasts longer—at no increase in price.

HIGH TENSION CABLE—Packard's Four-Forty and Lac-Kard high tension cables are known for dependable performance on every make and model vehicle in every type of service. Available in spools and sets.

BATTERY CABLES—Packard full-size battery cables assure fast cranking and quick starts, together with long life. They are available with your choice of the LeadAlloy terminal or the leaded brass terminal.

Packard cable is the *sure shot* answer to all your wiring requirements. It's the best there is . . . chosen as standard equipment on more cars, trucks and buses than any other make. Packard cable is widely distributed, nationally known. It's easy to stock, easy to sell. The clearly marked cartons give you complete size, gauge and application data at a glance . . . are self-displaying, keep cable clean and ready for instant use. Order Packard cable and be sure of hitting the mark with the right size cable for the right job every time.

Packard

REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio



FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING



Here's an easier way to buy cork gaskets

Easier ordering is a feature of Victor's streamlined packaging program. When you tell your jobber the kind of repair job you're doing and the make and year of the engine, he can immediately give you the cork gaskets you need in one handy Victor package.

The clear, easy-to-read label tells you just what's inside—a complete set of cork gaskets for your particular job.

Save time and trouble the next time you need cork gaskets. Just ask your jobber for an Armstrong-Victor Cork Gasket Set.



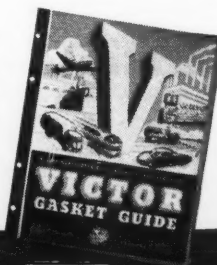
LOOK FOR THE TWO NOTCHES

Exclusive Armstrong-Victor Replacement Gasket Trade-Mark

VICTOR GASKET GUIDE

Victor publishes the most comprehensive Gasket Guide compiled—contains:

1. Factory numbers with Victor numbers.
 2. Special indexing where there are numerous motor models.
 3. Markings to show gasket set contents.
 4. Up-to-date gasket popularity ratings.
- Victor Manufacturing & Gasket Company,
5750 Roosevelt Road, Chicago 50, Illinois.



Armstrong-VICTOR



Safety Sam Says—

ALL BRAKE FLUIDS ARE *NOT* ALIKE



SELL ONLY

SAFE

BRAKE FLUIDS!

As one of the country's largest manufacturers of chemicals puts it—

“Some brake fluids are as much of a fraud as a \$500 engagement ring of glittering paste—and much more dangerous!”

In servicing the brakes on your customers' cars, you will be giving a *safety service* as well as a brake service if you refill the cylinder with a fluid which meets the standard set by the Society of Automotive Engineers (SAE).

You are perfectly safe in recommending Delco Super 9 (for regular or “moderate” duty) and Delco Super 11 (for heavy duty) because these fluids even *exceed* the SAE specifications.

To your customers, you are the expert. They'll gladly pay the few extra pennies it costs *to be safe*.



DELCO BRAKE—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Delco

SUPER 9 AND SUPER 11 BRAKE FLUID • DECLINE • BRAKE PARTS
STANDARD FOR EQUIPMENT • THE STANDARD FOR REPLACEMENT

MORaine PRODUCTS DIVISION OF GENERAL MOTORS

7

SERVICE BUILDERS

AC

**QUALITY
PRODUCTS**



**SPARK
PLUGS**

AC SPARK PLUGS ... with patented CORALOX Insulator

Demand is rising swiftly as the powerful *CORALOX* advertising campaign increases consumer preference. *CORALOX*, plus AC's dominant equipment position, makes AC Spark Plugs a "must" for service dealers who want real replacement volume.



**OIL
FILTERS**

AC OIL FILTERS and ELEMENTS ... "Dirt-Proof" Engine Oil

AC's "Dirt-Proof" campaign not only sells the need for oil filters, but also sells the superiority of AC Filters and Elements. Cash in on the industry's fastest-growing replacement market.



**FUEL
PUMPS**

AC FUEL PUMPS ... "Heart of the Fuel System"

The most popular of all equipment and replacement units. 40,000,000 in daily use. Should be replaced every 2 years to keep your customers out of trouble. Don't overlook the big profit possibilities in your territory.



**CABLE &
CASING**

AC SPEEDOMETER CABLE-CASING ASSEMBLIES

Patented machines and processes make AC Cables and Casings tops in quality. Conveniently packaged for quick service. Original equipment on half the cars on the road.



**AIR
CLEANERS**

AC AIR CLEANERS and ELEMENTS

Here's another replacement market in which AC is the big name. Heavy-duty cleaners for cars, tractors and trucks. Low-cost renewal elements that save time for you and provide new cleaning performance for your customers.



**FLEXIBLE
LINES**

AC FLEXIBLE GASOLINE AND OIL LINES

Assortment available with attractive Wall Merchandiser. Make-up Kit, complete with hose and assortment of fittings, also available. All lines built to highest quality and SAE standards.



**GASOLINE
STRAINERS**

AC GASOLINE STRAINERS

Made in both replaceable and re-usable element types. AC quality throughout—protect delicate carburetor parts—remove water, dirt and lint from fuel.



On his way to buy seat covers of

SUPERFINE *Textilene Sunsure*®

YES, seat cover sales are still booming; but more and more buyers are shopping around for value.

And because Textilene Sunsure materials offer them more value per dollar, more motorists ride on Textilene Sunsure today than on any other seat cover material.

Textilene Sunsure in the new SUPERFINE weaves combines the best properties of fibre with the feel of a fine fabric. It's smooth, strong, flexible. It's easy to slide over. It won't snag or pick. Static electricity is negligible.

Most important of all, seat covers of Textilene Sunsure are priced right. They're a substantial

item with a good mark-up for the retailer, but they're not out of sight in the stratosphere.

Look for that Textilene Sunsure label on the seat covers you sell. It's the sign of a good material, used by more than 500 seat cover manufacturers. It's advertised in 4-color, full-page space in HOLIDAY, the mass magazine in the class market.

And write for new 1950 samples today. They're designed by one of America's leading stylists in hound's-tooth and Scotch check designs in tune with 1950 textile trends. E. W. TWITCHELL, INC., Third and Somerset Streets, Philadelphia 33, Pennsylvania.



New! **RED HOT** Profit-Maker **LUSTERIZE** Spray **WAX**

Extra Quality Wax That's Easy to Use!

- 1** Your Biggest Volume Ever in Wax Sales with New Spray Package
- 2** Gross Profits up to 75%
- 3** More Turnover—LUSTERIZE Customers Will Make Quick Use of Their Purchase
- 4** Repeat Business—Because LUSTERIZE Combines Convenience with Quality!

DISPLAY CARD SELLS 'EM
This attractive counter card will sell many a can of LUSTERIZE SPRAY WAX for you. It shows how easily and how well LUSTERIZE works. Put one on your counter and watch it sell! Ad mats are also ready to help you sell!

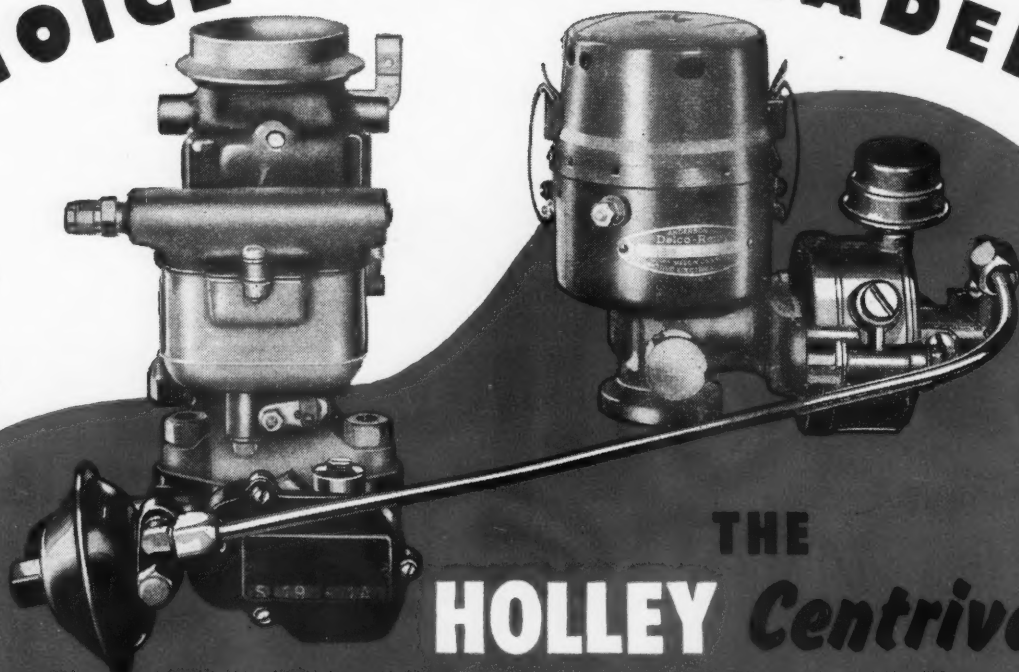
It's a fact! Here's the hottest thing ever to hit the auto wax business! LUSTERIZE SPRAY WAX—a pure carnauba wax in liquid form—is homogenized for spraying, and packaged in a 12-ounce aerosol spray can. Spray wax makes car waxing quick and easy—cuts application time to mere minutes, and eliminates rubbing and buffing altogether. Just spray it on—wipe it off! Wonderful for furniture, too!

LUSTERIZE WAX is also available for professional spray use in regular gallon and pint cans. Sprays on like paint—cuts labor costs in wax jobs. Ask your Whiz jobber to deliver your stock now. Now's the time to act for more profits!



R. M. HOLLINGSHEAD CORPORATION • Camden 3, New Jersey
Canadian Offices: Toronto • Warehouses: Dallas, San Francisco, Chicago

CHOICE OF THE LEADERS



THE **HOLLEY Centrivic** **SANDWICH GOVERNOR** *Combined with the DELCO Distributor*

REDUCES POWER LOSS: The Holley Centrivic Governor does not choke the engine when pulling heavy loads up hills because governor throttle remains wide open until the engine reaches its governed speed. Hence, the Holley Governor reduces power loss and improves operating efficiency.

PROVIDES FASTER ACCELERATION: The Holley Governor permits the engine to accelerate normally since the governor throttle remains wide open up to desired control point of engine speeds.

ELIMINATES SURGING: Truck drivers appreciate the steady flow of power, free from surging, which has been accomplished by the unique and exclusive design of the Centrivic principle of centrifugal air valve control over a vacuum powered diaphragm.

IMPROVES SPEED REGULATION: The new Holley Governor is operated by a vacuum powered diaphragm

which is controlled by a centrifugal air valve mounted on the side of distributor. This insures a more even flow of power—greatly improved engine performance—a higher economy factor.

INSURES SMOOTHER OPERATION: Because engine surging has been successfully eliminated, truck operation has been improved. Driver objections to governor controlled vehicles have been largely overcome with the Holley Centrivic Governor, while wear and tear on a driver's nerves are removed, and fatigue factors reduced to the minimum.

ECONOMICALLY INSTALLED: Due to its revolutionary design, the Holley Centrivic Sandwich Governor can be installed on most popular truck designs without need for special drive, linkage, or adaptor accessories. Only one piece of metal tubing is used, connecting the governor control valve with the governor.

STANDARD EQUIPMENT ON

AUTOCAR, CHECKER BUS, GENERAL AMERICAN AEROCOACH,
INTERNATIONAL HARVESTER, WARD LA FRANCE,
FLEXIBLE BUS, GENERAL MOTORS TRUCK AND COACH.

ALSO AVAILABLE FOR
OTHER POPULAR MAKES OF TRUCKS

HOLLEY

Carburetor Co.

5920 Vancouver Ave.
DETROIT 8, MICHIGAN

AUTOMOTIVE EQUIPMENT AND ACCESSORIES



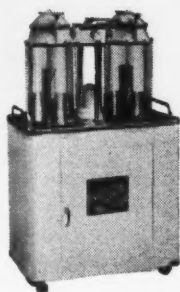
PRESSURE-PURGE

With Non-acid



FOLLOW THE LEADER! THE CHOLDUN 1950 PROGRAM AND CHOLDUN EQUIPMENT MAKES MONEY FOR YOU!

PRESSURE PURGER for Cleaning Cooling Systems



Dramatic, Impressive and Effective. Your customer can SEE the rust scale, grease and grime as it is purged from the Radiator and Motor Block.

Visible tumbler cleaning action, with continuous reversing motion, loosens, dissolves, purges and filters all harmful engine wearing particles.

OIL CHECKER, CHANGER and FLUSHER



Out with the old oil — in with the New. Your customer sees the dirty, "tired" oil and you sell new, "live," fresh oil and get extra profit for a flushing job. The CHOLDUN OIL CHECKER, CHANGER AND FLUSHER is a money Maker.

The attractive white enamel unit brings you Customers and builds good will and profits.

PURGITE CHEMICAL (to be used with Pressure Purger)



Do not confuse PURGITE with the ordinary caustic and acid type of radiator cleaners.

PURGITE is the "10" chemical cooling system cleaning Compound. It is a water softener. It removes rust scale, lime, iron and metallic deposits. PURGITE dissolves grease, tar, oil and dirt. PURGITE will not harm radiator, hose, aluminum, motor block, hands, clothes, or finish on your car.

Choldun



MANUFACTURING CORP.

New Haven, Conn.

SALES OFFICE: 11 WEST 42 STREET, NEW YORK 18, N. Y.

EXPORT OFFICE: 238 Main Street, Cambridge 42, Mass.

MOTOR AGE, February, 1950

1. Decal—Easy to apply to door or window.
2. Service Manual.
3. Radio Scripts.
4. Mats for local newspaper advertising.
5. Dealer Mailing Literature.
6. Catalogue Sheets.
7. Outside Banner—Day-Glo Lettering—3' x 5'.
8. Over 1,000,000 Trade Publication ads.
9. Window Displays.

**FREE ADVERTISING CAMPAIGN TO
BRING YOU NEW SERVICE CUSTOMERS**

CHOLDUN MANUFACTURING CORP.

11 West 42nd Street New York 18, N. Y.

- ☐ Please send complete details on the "PRESSURE PURGER" and "OIL CHECKER CHANGER and FLUSHER."
- ☐ Please arrange for a Free Demonstration of this equipment.

Name

Address

City Zone State

Let's Stop PINCH-PENNY SELLING!

WHAT IS PINCH-PENNY SELLING?

Here's one example . . . to replace a set of spark plugs—and not replace the old ignition wires is pinch-penny selling. New spark plugs can't give peak performance through old wires, (see table at right).

When the customer comes back still having trouble, and you ask him to pay for new ignition wires, he balks—claims that if they were needed you should have replaced them in the first place. A customer always kicks about paying anything—no matter how little—for a “make-good” job. He refuses to accept your explanation that you were trying to save him money.

It's wrong to sell a man anything he doesn't really need. But it's just as wrong not to sell a customer what he *does* need to assure peak performance. Pinch-penny selling gets you into trouble . . . costs you business . . . robs you of profits . . . loses customers. Therefore, never install new spark plugs without installing new ignition wires.

• The winner, the third and the sixth cars at the Indianapolis Race in 1949 were equipped with Crescent Wiry Joe. They know the difference that good ignition wire makes.

DYNAMOMETER TESTS

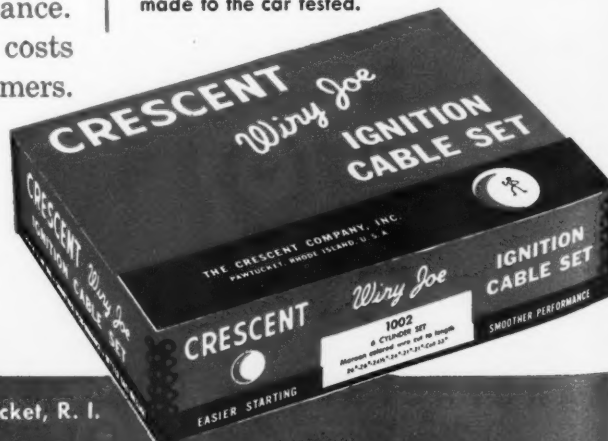
Prove

NEW IGNITION WIRES MAKE BIG DIFFERENCE IN ENGINE PERFORMANCE

The following table gives results of dynamometer tests on a 1935 Oldsmobile before and after installation of a new set of Crescent 90-05 High Tension Ignition Wires.

	Old Wires	New Wires	Increase
1. Motor RPM	700	1000	42.75%
2. Torque	22	27	22.75%
3. MPH after full load	14	18	28.6 %
4. Load applied at (MPH)	45	45	
5. Time required for breakdown from (4) to (3) above	20 sec.	45 sec.	125. %

NOTE: No adjustment or replacement other than installation of new Crescent ignition wires were made to the car tested.



THE CRESCENT COMPANY, INC., Pawtucket, R. I.

Check the wire and cable on every car!



Is this YOUR target?



Even the shop so small that it has only room to work on two jobs at a time can handle more volume and make more profit *without increasing space.*

The answer is . . . "better equipment!" Turn out each job *faster*. Make room for the next job *quicker*.

You need only one string to your bow to hit this target. No angel to bankroll you . . . no big outlay of your own capital. Just A.E.P.

Ask your jobber about it. Make a wise selection of the equipment you need most and buy it now on the Automotive Equipment Plan.



If you don't know about A E P . . . ask your jobber.

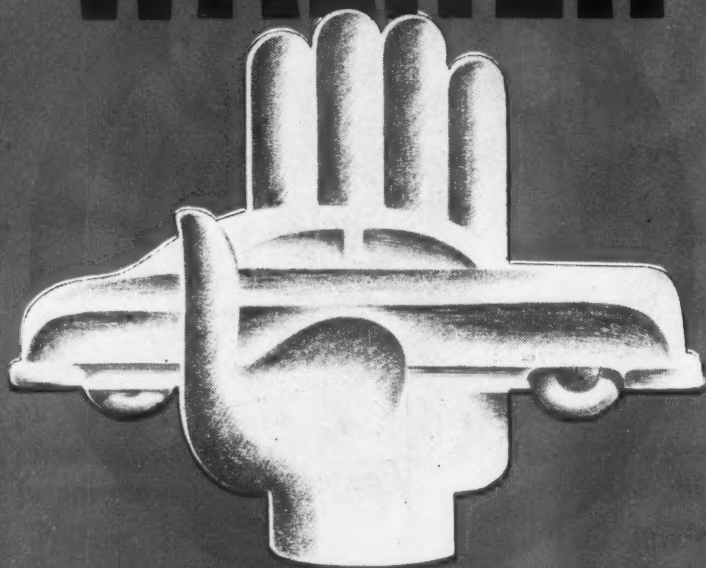
COMMERCIAL CREDIT CORPORATION

A Subsidiary of

Commercial Credit Company, Baltimore ■ Capital and Surplus Over \$100,000,000

MORE THAN 300 OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

WALKER



*it pays to be
identified
with Walker*

BOOST YOUR SALES . . . BOOST YOUR SERVICE VOLUME

WALKER
"Individually Tuned"
SILENCERS

WALKER
OIL
FILTERS

WALKER
JACKS

WALKER
Electric
LIFTS

... MAKE MORE SALES EACH DAY



with the most powerful name in Exhaust System service

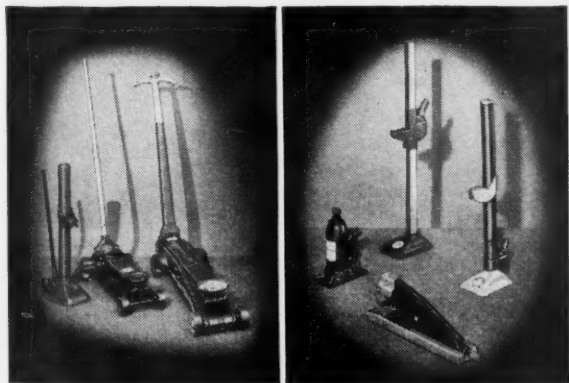
You, as an Authorized Walker Dealer, can offer your customers the finest of all exhaust system services—a Walker Silencer "Individually Tuned" to each particular car make and model—for freedom from noise fatigue . . . for safety from dangerous exhaust fumes . . . for peak engine performance. With years of consumer advertising in *The Saturday Evening Post* . . . with sales-making, point-of-sale identification . . . and with periodic merchandising programs, Walker helps you make real money in mufflers.



with America's newest, finest Oil Filter

It's easy to sell Walker Oil Filters because it's easy to show your customers how the patented Walker *Laminar* construction gives real engine protection by keeping the oil *clean* between oil changes. This exclusive principle of multiple filtration—surface filtration, depth filtration and progressive filtration—cleans oil better, keeps it clean longer. Make this your best, most profitable oil filter year with Walker—America's newest, finest oil filter.

... DO MORE JOBS EACH DAY



with Modern Jacks engineered for today's modern service

In the shop, on the driveway and out on the road, there is a Walker Jack to meet your every need. And in this *complete line*, there is a Walker Jack to serve your customers' every purpose. In each of these new, improved, deluxe jacks you will find an extra margin of strength for the unexpected . . . an extra margin of safety for greater protection . . . an extra margin of power when emergency calls.



with the lift that's always "Open for Business"

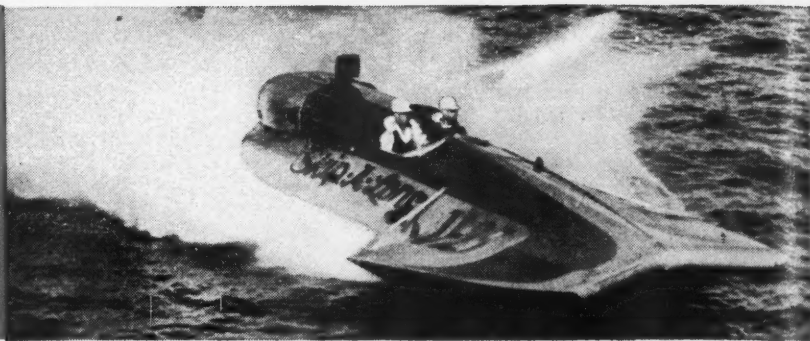
Increase service volume and profits 20% to 50% with the advanced, new Walker Electric Lift. New positioning of the support beams increases unrestricted working space by 36%. Six extra inches of working height give you even greater working convenience. From floor to car bottom, your men and equipment work free from any obstruction in the famous Walker Open Work Zone. And you can locate it wherever you want it—at the lowest installation cost of any lift on the market.

WALKER MANUFACTURING CO. OF WISCONSIN
Racine, Wisconsin

... BOOST YOUR PROFITS WITH WALKER IN 1950

DETROIT, AUGUST 1st

R. Stanley Dollar, Jr. drives his Mobiloil-protected "Skip-A-Long" at a record-breaking pace of 94.285 mph to win the Harmsworth Trophy.



GRAND SLAM

**Winners of Land, Sea
and Air Speed Classics**



*Mobiloil
Protected*

● Mobiloil scored high in 1949—helped keep engines roaring full-throated through grueling miles as U. S. A.'s top racing drivers chalked up new speed records.

Offer motorists this same winning protection! It's a sure way to build greater customer confidence in you!

SOCONY-VACUUM OIL COMPANY, INC.
and Affiliates: MAGNOLIA PETROLEUM CO.
GENERAL PETROLEUM CORPORATION

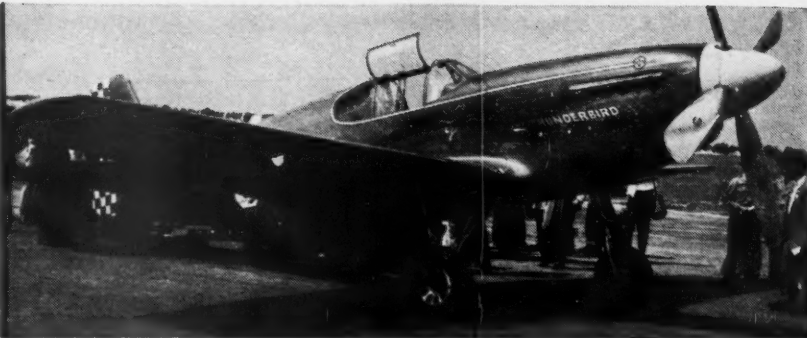


**More than Ever—
it Pays to Sell the**

World's

CLEVELAND, SEPT. 3rd

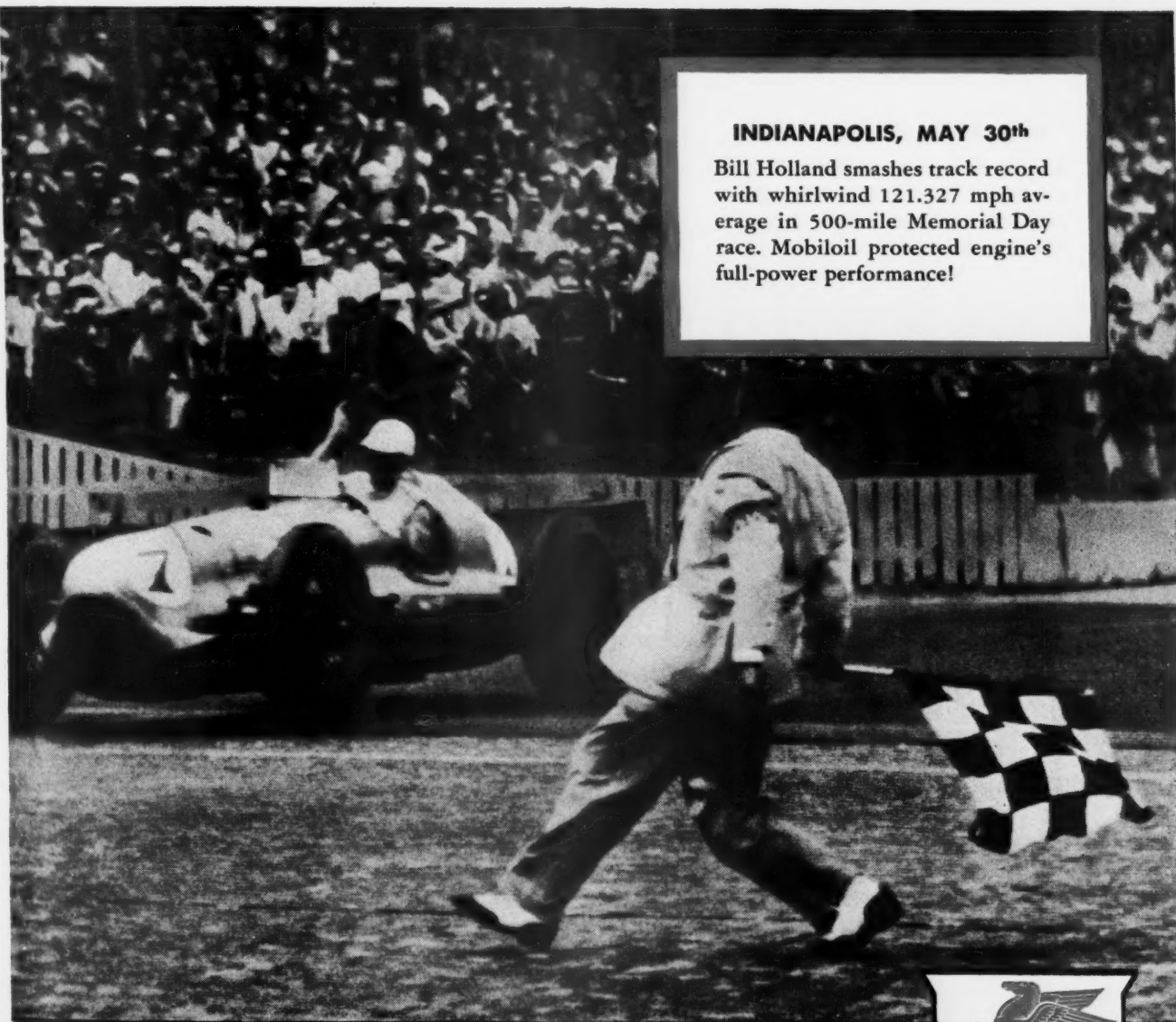
Joe DeBona captures the coveted Bendix Trophy with new record average of 470.136 mph over 2010-mile transcontinental course. Another win with Mobiloil!



FOR Mobiloil

INDIANAPOLIS, MAY 30th

Bill Holland smashes track record with whirlwind 121.327 mph average in 500-mile Memorial Day race. Mobiloil protected engine's full-power performance!

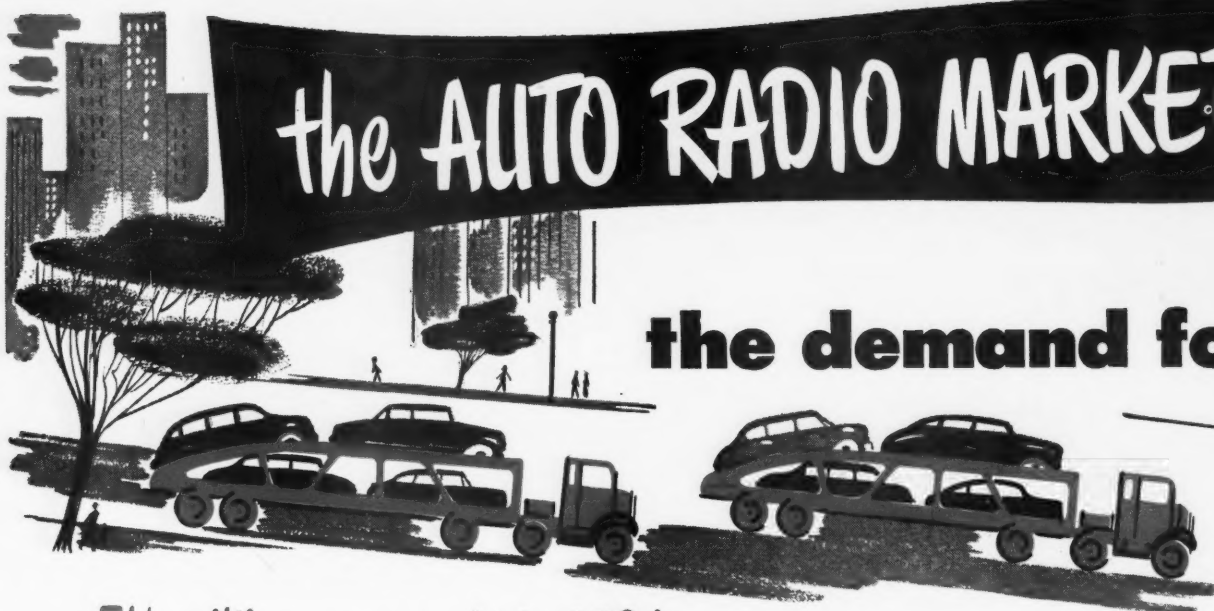


Best Seller



the AUTO RADIO MARKET

the demand for



5½ million cars sold in '49!

Out of this overwhelming figure a gigantic market is yours for the taking! One big-three manufacturer reports that 75% of their lower priced cars are shipped *WITHOUT* RADIOS. By an average of the four post-war years for *all* models of cars made by this manufacturer, the number of cars shipped without radios totals 85%! This added to other production figures from the auto industry represents a terrific market for America's favorite auto radio—Motorola, of course!

Again this year Motorola development, design and production of auto radios lives up to the Motorola tradition of high quality. Again, tireless product research combined with mature engineering techniques pay off for you—pay off for your customers! Unfailing power, 3-dimensional Golden Voice tone, and precision construction that minimizes servicing are the qualities your customers seek in auto radios. Feature Motorola and you feature these profit-producing qualities!

40 million families read about Motorola every month!

And they're *buying* families every one! They're the people who read such powerful national magazines as LIFE, THE SATURDAY EVENING POST, COLLIER'S, TIME, NEWSWEEK, LOOK, NEW YORKER, NATIONAL GEOGRAPHIC, SUNSET, COUNTRY GENTLEMAN, FARM JOURNAL, SUCCESSFUL FARMING and others—*believed in* by folks in all walks of life. Tie-up with Motorola—a product that's *believed in*—backed by big-name national publications!

for more sales, contact your
Motorola distributor today!



the BEST is now BETTER than ever before

is BIGGER THAN EVER!

Motorola is tremendous!

new 1950 models
are the best ever

... WITH SELLING FEATURES GALORE!
Motorola—with more "FIRSTS"
than any other, now presents a
brand new line for '50! Always
the standard for the industry, the
new Motorola auto radios give
your customers an even greater
measure of value for their radio
dollars . . . and promise you a
year 'round source of easy sales
and trouble-free profits! Ac-
tion now will ring your
register later!

use this

display-demonstration

board and you'll sell

everybody knows and prefers

Motorola

RADIOS • AUTO RADIOS
TELEVISION

MOTOROLA INC. • 4345 AUGUSTA BLVD. • CHICAGO 91, ILLINOIS





Around the World



Sealed Power

MD-50 STEEL OIL RING

The only ring with the Full-Flow Spring

DOES THE WORLD'S BEST JOB OF OIL CONTROL EVEN IN

BADLY TAPERED AND OUT-OF-ROUND BORES!

DOUBLE THE DRAINAGE WITH HALF THE DRAG!

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW CARS

BEST IN OLD CARS



NEWSCOOP

General Motors "MidCentury Motorama" attracted more than 320,000 people during a nine-day run at the Waldorf-Astoria in New York City. This attendance figure far surpassed the 300,000 record set last year. Daily crowds, ranging from 31,000 to a bulging 44,000, filed in to see the showing of the complete line of General Motors cars for 1950 and other GM products. One of the highlights was the introduction of the new Cadillac line. The record-breaking attendance indicates a continued high public interest in automobiles and should bolster optimism in another year of high production and high sales in the automobile industry.

Motorist Excise Tax Bill

Special taxes paid by motor vehicle owners in the United States last year totaled nearly \$3,700,000,000, a new all-time record. Of that staggering amount, about one-third, or \$1,230,000,000, was collected in Federal excise taxes levied against the motorist, according to figures compiled by *Automobile Facts*.

Backlog Filled by June

The automobile industry will go on a replacement basis, plus any new market due to population growth, by next July 1, according to Dr. R. S. Tucker, economist for General Motors. He said the unfilled demand has been met for all but the lower priced cars and that this market also will be satisfied before the end of June.

TBA Aims for Bigger Share

Oil companies are making ambitious plans to capture a much larger share of the tire, battery, and accessories market this year. Most of the major oil concerns are optimistically pushing campaigns to bring the total share of the market in 1950 to a level higher than prevailed in 1947 when it amounted to nearly \$300 million. It is estimated that service stations in 1949 sold about \$275 million worth of such products.

Higher Replacement Tire Sales

The tire industry is looking for an increase in replacement tire sales this year. Findings of a nation-wide survey made by Goodyear Tire & Rubber Co. indicates that replacement tire sales should run about 15 per cent higher than they did last year.



Rubber Roads Predicted

Thousands of miles of rubber surfaced highways will be laid in this country within the next ten years, according to P. W. Litchfield, board chairman of Goodyear Tire & Rubber Co. He points out that a section of rubber highway installed on a heavily traveled street in Akron 25 years ago still shows little or no deterioration. He adds that similar roads laid in Holland before the war and subject to heavy pounding by war vehicles are in excellent condition. Other advantages are that a rubber asphalt mixture seals out water, protecting foundation from seepage, maintenance costs are lower, and traffic tie-ups because of road repairs are minimized, since only a few hours time is required for the material to set after being applied.

Parts and Service To Be Good

General opinion is that automotive replacement parts prices will be fairly well stabilized this year after a small decline in 1949. There will, of course, be adjustments in certain lines to meet competition, but the general price level is not expected to change materially. The consensus in Detroit is that the parts and service business will hold this year at just about the same level as in 1949, which was about 20 per cent below the peak reached in 1948.

Price Decline Continues

Prices of station wagons continue to decline. All General Motors divisions have made large cuts in the price of their all-steel station wagons and Mercury recently reduced the price of its 1950 model by \$148 to \$2397. At the same time Ford made a \$148 cut on its V-8 station wagon and also announced addition of a 6-cylinder model listing at \$1895.

Pontiac to Keep L-Head

Apparently Pontiac is not planning a completely new engine for the immediate future. At the General Motors press conference in New York, George Delaney, Pontiac chief engineer, said that his division will stay with the L-head engine for the foreseeable future. On the other hand, C. E. Wilson, GM president, in a press conference at Dayton last year, said that any new engines developed by GM divisions in the future would be of the overhead-valve type. The two statements are not necessarily contradictory; they merely indicate that Pontiac will not soon go to a valve-in-head engine. Buick's chief engineer, Charlie Chayne, also stated that Buick will have no V-8 engine in its line for some time, but he did not rule out the possibility for the long term.

Caustic Comment

One reader offers a new slant on an old gag: "The only way to do away with a back seat driver is to develop a car that travels faster than sound."

It's a Fact...

- ★ that 2,250,000 passenger cars were scrapped during 1949.
- ★ that 575,000 trucks were scrapped during 1949.
- ★ that the average age of cars in use during 1949 was 8.41 years as compared with 8.70 in 1948 and 5.33 in 1941.
- ★ that dealer stocks of new passenger cars as of December 1, 1949, were 571,000 units.

Predictions...

1949 Traffic Death Rate Lowered

Although final figures have not been compiled, the National Safety Council reported recently that 1949's traffic deaths would total about 31,500, a saving of 500 lives compared with the death toll of 32,000 in 1948, and a substantial drop from the 32,697 fatalities in 1947. On the basis of an estimated 1949 travel total of 417 billion miles, it is indicated that the nation again reduced the fatality rate to a record low of about 7.6 deaths per 100 million vehicle miles of travel. This compares with 8 in 1948, 12 in 1941 and 13.9 in 1935.

V-6 Engine Comment

There is little indication that Chevrolet has any serious plans for adopting a V-6 engine, at least while compression ratios are not materially higher than they are at present. Ed Kelly, chief engineer for Chevrolet, says that tests thus far indicate there is no need for abandoning the in-line Six. On the other hand, J. F. Wolfram, Oldsmobile chief engineer, has confirmed that his division has built some experimental V-6 engines, which while not necessarily lower in cost to produce when compared to 8-cylinder in-line engines, may prove to be the most economical way of getting the required stiffness of construction when fuels are available to permit compression ratios of from 10 or 12 to 1.

No Sealed-In Engines

Don't look for any sealed-in engines in passenger cars in the foreseeable future. Engineers point out that as long as periodic oil changes and lubrication service are necessary on engines they cannot be successfully sealed in. They are also not at all encouraging about the possibility of a sealed cooling system using some other coolant than water.

Sinclair Offers Transmission Fluid

Sinclair Refining Co. has joined the ranks of oil companies marketing Type A transmission fluid which is a universal type for all GM automatic transmissions and the Packard Ultramatic. It also will be satisfactory for use in the Mercury and Ford automatic transmissions when they are introduced.

★ that, despite claims and arguments among GM divisions about the merits of torque converters versus the gear-step type automatic transmission as represented by Hydra-Matic, the ultimate GM transmission will be a combination of the best features of both types.

★ that the new small Nash to be announced this spring will not follow the style lines of the current Ambassador and Statesman series but will be more straight lined and less "jello" in effect. Also it probably will not be priced as low as generally expected because the stress may be on quality appointments, at least at first.

★ that Ford will have a hard top convertible in its line within a few months, before the current model run is finished.

by Peter Folwell

K-F Hydra-Matic Transmission

Kaiser-Frazer will offer the GM Hydra-Matic transmission on its new lines. The company is also working with Borg-Warner on adaptation of another type of automatic transmission to be offered on the lower priced K-F line which will make its appearance this summer. Only minor changes will be required in the K-F line to adapt Hydra-Matic, since the car was originally designed to take whatever type automatic transmission the company might select.

National Auto Show?

Chicago's Automobile Show, opening Feb. 18 at the International Amphitheater and sponsored by the Chicago Automotive Trade Assn., may well lead to the establishment of the National Auto Show in that city. Currently sponsored by dealers and supported by car factories, advocates of the national show idea point out that Chicago is the "natural" location for the industry's new car debut, when, as and if car factories decide to go together on such a merchandising effort.



New Car Bootlegging

The National Automobile Dealers Association's Industry-Relations Committee appealed to all new-passenger car sales managers on the growing menace to enfranchised dealers, and to public interest, in new car bootlegging, embracing all makes and latest models. Pointing out that the selling and advertising of new cars by non-enfranchised dealers at prices far below local delivered prices, places the enfranchised dealer, with his substantial business investments, in a very questionable position with the public. NADA's Industry-Relations Committee requested factory sales managers to inform them what definite action their factories are taking to halt the practice.

Time Lost Through Strikes

Just for the record, time lost from strikes last year was second only to the 1946 record. According to the Labor Department in Washington, about 53 million production days were lost by work stoppages last year, this figure being exceeded only by the 116 million days lost in 1946.

G.M. Believes in Shows

With the success of G.M.'s Waldorf-Astoria show, C. E. Wilson, G.M. president, was asked to express G.M.'s viewpoint on the revival of a national automobile show. Mr. Wilson said, "We believe in shows . . . we believe in promoting the business and exposing ourselves to our customers and stimulating their interest in the automobile . . . We would be inclined to go along with anything the industry would want to do." Mr. Wilson added that the \$64 questions with which the industry is struggling are: making up the collective minds of the group on the matter of a show; then, what kind of a show; and finally where and when.

Octane Numbers Up

Octane numbers of regular and premium-price gasolines were one to two points higher last summer than during the two previous summers, according to the semi-annual survey of the Bureau of Mines. The average octane rating of regular gasoline tested last summer was 81.9, compared with 80.1 in 1948, and 80.2 in 1947. The average for premium gasolines was 88.0 last summer, compared with 86.1 and 85.9 in the two previous summers. The 1949 summer averages are considerably higher than the ratings of wartime summer gasolines.

On "Making" a Depression

"The automotive industry can help make its own depression by crying 'hard times' at every opportunity, Elwood M. Brooks, president of the Central Bank & Trust Co., Denver, told members of the Denver Used Car Dealers' Assn. Brooks said he could foresee no depression such as experienced in the '30s occurring in the near future. He cited the public's savings, investments and insurance as a 'cushion' against any near future depression and advised an 'optimistic viewpoint' toward business conditions."

Ford Engine Changes?

Confirmation of Ford's plans to build a new engine plant and foundry at Cleveland leads to the conclusion that the company will make no major engine changes before very late next year. The new Cleveland operation is not scheduled to get into operation until late 1951 and undoubtedly tooling for the new series of engines Ford has in the works will be done coincident with equipping the new unit. It is understood that the Ford Six and Mercury V-8 engines will be built at Cleveland with the Rouge plant in Detroit supplying Ford engines. It would appear unlikely that a new Ford V-8 engine could be tooled at the Rouge ahead of completion of the Cleveland operation because facilities will be required to produce power plants for Ford Sixes and the Mercury V-8. The new engines Ford will put in its line late next year are of the overhead-valve type.

Safety Crash Pads

It was bound to come sooner or later. A bill will be introduced in the New York legislature requiring that safety crash pads be installed on dash boards of automobiles sold in that state after Jan. 1, 1952.



EDITOR'S NOTEBOOK



Frank P. Tighe
EDITOR

Beware of the New Virus

THERE is a new virus going the rounds. No one has seen it but every one seems to be feeling the effects of it. There is no real cure at this time. Doctors are working on it.

The sad thing about this new virus is that it creeps up on you. First it eases the pain of getting something for nothing. Then it twists the brain center so that a hope becomes a fact. It blots out all lessons learned at home, at church and in school. It develops so fast that it often acts on the sympathetic nervous system and upsets the glands.

Emotions are stirred up to an extent that the patient feels that everyone owes him a living. That he ought to have everything he wants. In severe cases he believes the boss, the government, his wife, his children or even the priest or pastor are out to keep him from enjoying life without responsibility.

This virus appears to eliminate the positive and accentuate the negative. Nothing is right. Everything is going to the dogs. There is no hope except to work for the day when there will be nothing to do except get the monthly check from the government or the company. . . .

Lately there is a more ominous turn to events. This virus is attacking some of the people responsible for the industrial progress of the country. There is no telling how far it will go in that direction. If it becomes epidemic we may as well turn out the lights and just sit down and wait for doomsday.

Top management in some cases is rising up in arms. They are pointing to their own ranks where some officials are looking longingly at the pension age limit. At the pay to come. At the day when there will be no more decisions and lots of time to do nothing.

Before this mirage affects the best brains of the country it is probable that a cure will be discovered. Until then it is well to look out for the new virus which is nameless but which may be called "fear of living."

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Tom C. Campbell

Editor, The Iron Age

"... a blonde that can cook"



C. E. Wilson aptly describes the GMagical
Midcentury Motorama held recently in New York
and the complete line of General Motors Cars

by Frank P. Tighe
Editor

THIS story has made the rounds . . . but it's worth retelling for it does describe what General Motors is offering its dealers and the motoring public this year.

At a news conference just prior to the opening of General Motor's Mid-Century Motorama, Rex Cleveland, automotive editor and veteran news man of the *New York Times* asked C. E. Wilson this question:

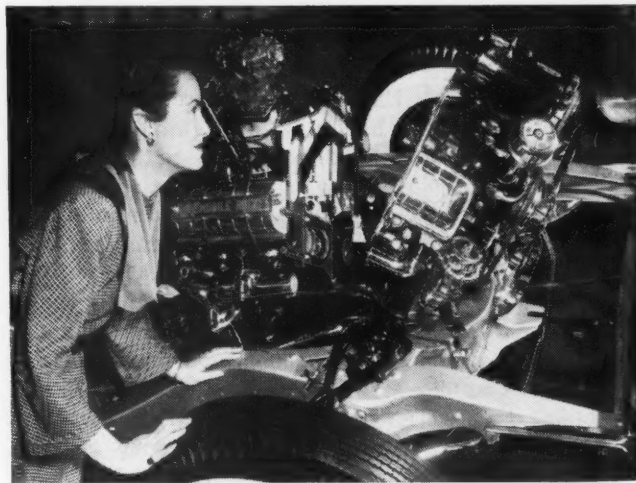
"Mr. Wilson, on the general question of design, is there any thought of turning attention toward the use of the car more than the looks of the car?"

With a quiet grin, Mr. Wilson turned and replied, "Well, I think I can say that our objective is—a blonde that can cook."

General Motors has indeed introduced not one but five blondes that can cook in 1950, namely Chevrolet, Pontiac, Buick, Oldsmobile and Cadillac. And their collective debut was made in dramatic and fashionable style at the Mid-Century Motorama in the Waldorf-Astoria, New York.

The Mid-Century Motorama was General Motor's second post-war glamorization of its new cars . . . and the curious as well as the swells came by the thousands . . . nearly 400,000 from

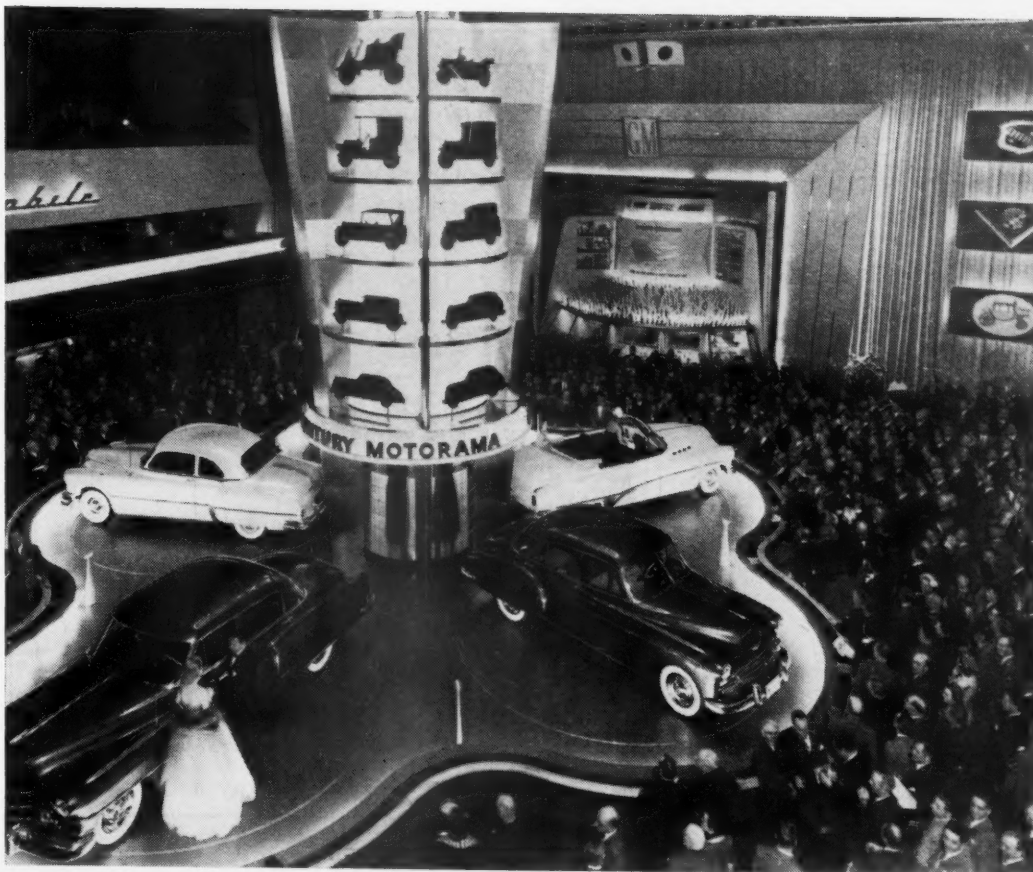
Below. An Oldsmobile rocket engine splits in half as Catherine Ames, of New York, looks on. The entire chassis revolves so that spectators can see it from all angles.



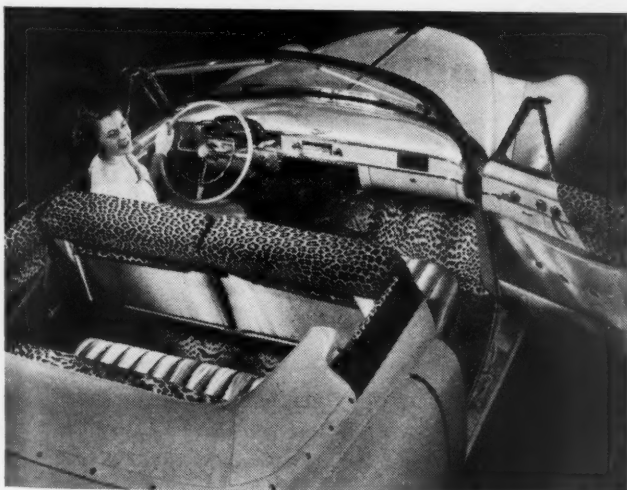
Jan. 19 to Jan. 27 inclusive. That, by the way, is a new record for the Waldorf spectacle.

Feature of the GM 1950 auto show was the "Pillar of Progress," in the center of the Waldorf's grand ballroom. Around this rose a five-leaf clover stage, each leaf of which displayed representative models of each GM car.

In the cars and appropriately draped were some of New York's best looking gal models. These participated in a fashion display present-



Above. Thousands of spectators packed the ballroom of New York's Waldorf-Astoria this week to view the opening of the 1950 G.M. automobile show.



Left. Cadillac's "Debutante" convertible, upholstered in leopard skin, has every unpainted surface gold plated. This is the most luxurious car ever built by the division.

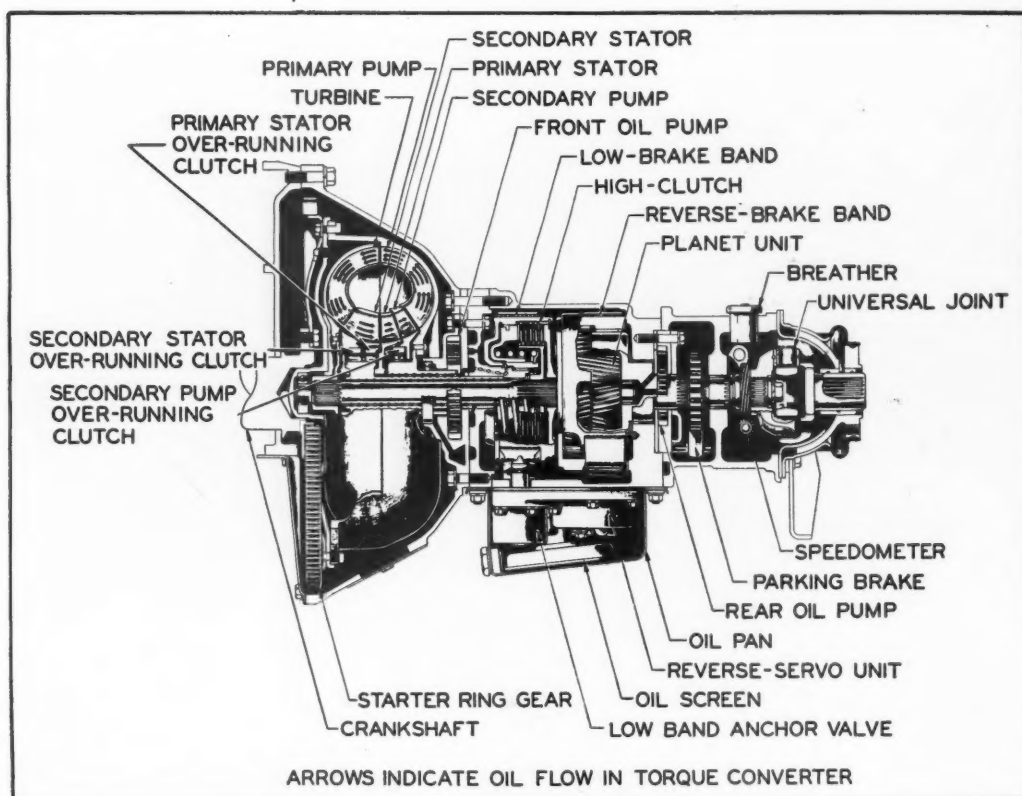
ing current women's apparel. The other show feature was a series of five skits called "Motors and Melodies" and presented on another stage at one end of the ballroom. The skits touched upon important periods from 1900 to 1950, with the emphasis on the role the automobile has played in the development of the country.

Thirty-eight 1950 models were displayed. Several unusual jobs added more glamour to the show. Among these were a Cadillac lined with

leopard skin and finished in satin and with gold trim. It was identified as the "Debutante." An Oldsmobile, resplendent in alligator hide, was called the "Palm Beach Holiday." Then there was the Buick "Riviera" . . . the super deluxe Pontiac "Catilina" model . . . and Chevrolet's smart new "Bel Air," also a hardtop "convertible."

Other attractions included displays of Fisher Body, Chevrolet Truck, G.M.C. truck, Allison and Aeroproducts divisions. Included in the exhibits was the new T40 turbo-prop aircraft engine, developed for the Navy by the Allison division of GM, with Aeroproducts' new contrarotating propeller. It was the first public showing for both airplane units. The T40 is rated at 5,500

(Continued on page 93)



Sectional view of Dynaflo Transmission showing the various working parts.

Trouble Shooting and Servicing the BUICK Dynaflo Transmission

by Jack Montgomery, Technical Editor

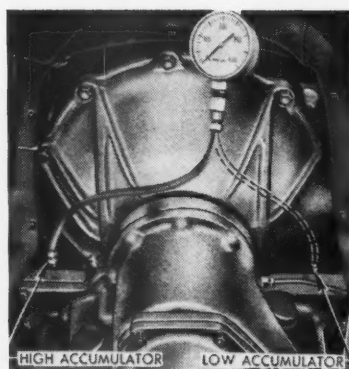
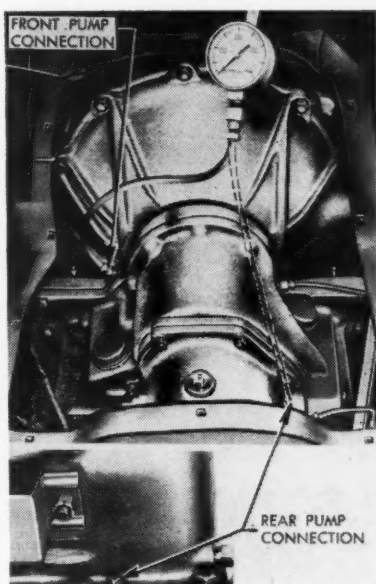
BEFORE performing any work on the Buick Dynaflo transmission the car should be road tested and a note made of its operation. No shop tests should be made until transmission is warmed up. Drive the car in all ranges to detect any sub-standard condition. The required "feel" of a Dynaflo car can best be acquired by driving a number of cars, the performance of which is known to be satisfactory. Knowledge of which parts are in operation and which hydraulic controls govern the operation in each range is most important for proper diagnosis.

Make tests in direct drive, low and reverse, as well as when shifting between low and direct

drive under a load. Try the car on steep grades as well as level roads when possible. After the forward tests have been made try the reverse operation. The amount of creep in all ranges with car at a standstill on a level road should also be noted.

When a complaint of excessive slippage in direct drive is noted, it would have you believe the direct drive clutch is at fault, while the road test would reveal that slippage occurred in low and reverse, at which time the clutch is disengaged. Slippage in all three ranges would indicate low oil level, improperly adjusted control linkage or improper pump pressure.

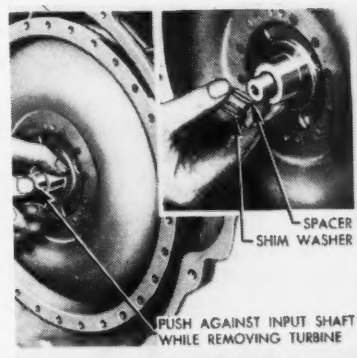
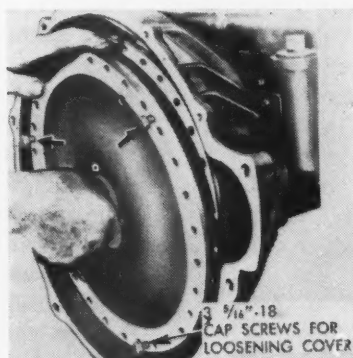
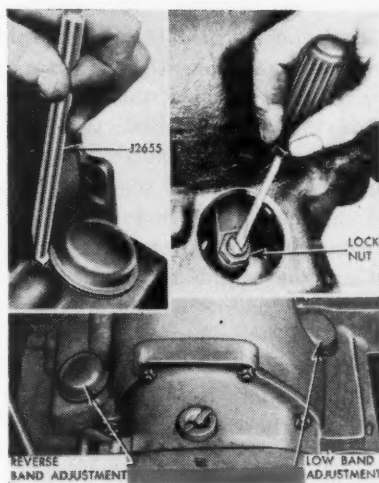
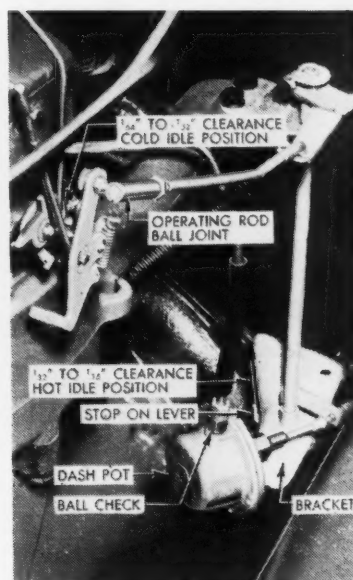
(Continued on page 42)



1. Checking front oil pump pressure with special gage. Remove pipe plug and attach gage on left side of reaction shaft flange.

2. Checking accumulator pressures with special gage. Remove pipe plug in top of accumulator body and attach gage as shown.

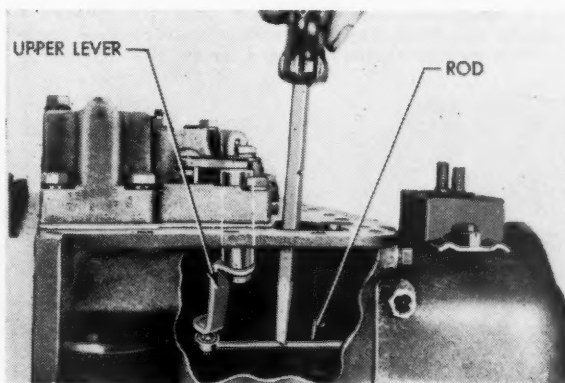
3. Location of throttle dash pot and throttle linkage adjustments.



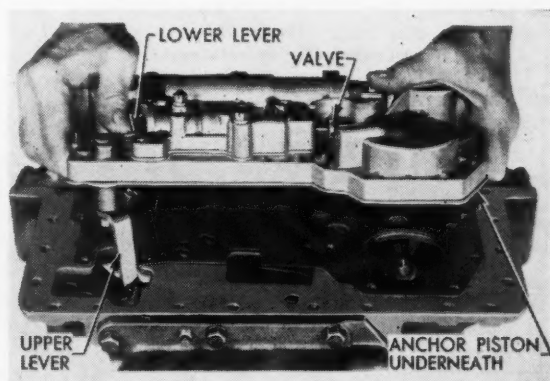
4. Step by step procedure for adjusting the low and reverse band. Adjustments are easily accessible after removing the floor pan.

5a. Install cap screws into the three tapped holes in pump cover as shown to remove converter pump cover.

5b. Remove shim washers, spacer and turbine. Push against end of input shaft to avoid withdrawing this shaft with converter turbine.



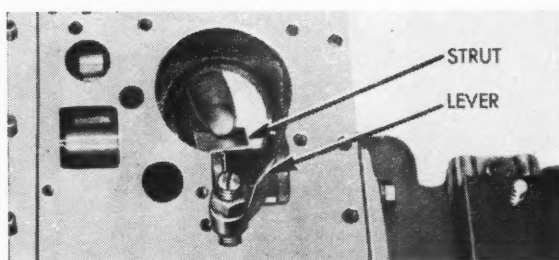
5c. Disconnect valve operating rod from upper lever by placing screwdriver on rod close to lever and exerting light pressure.



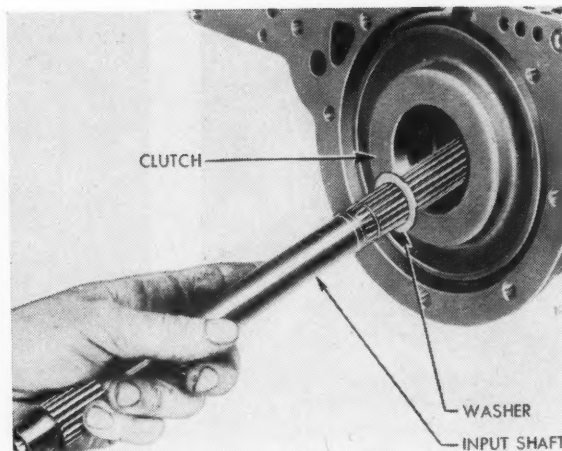
6. Removing valve and Servo Body assembly. Separate body assembly by lightly prying between the body and transmission case.

Buick Dynaflow

Continued from Page 40



7. Removing Reverse Band Operating Strut. Extend finger through the adjustment hole as shown to prevent strut from falling into transmission case, then release the strut by raising the operating lever.



8. Removing Input Shaft and Clutch Hub Thrust Washer. Pull input shaft and clutch hub front washer from the clutch assembly.

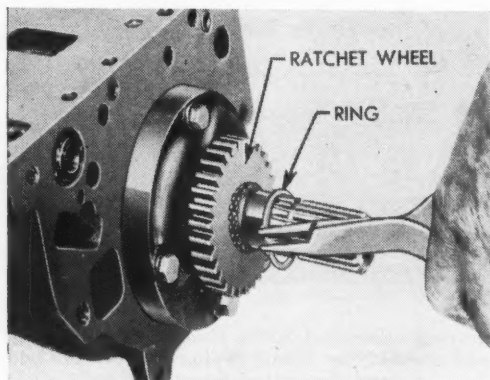
Make the following tests in the shop after transmission is thoroughly warmed up. Check oil level by means of the oil gage rod. On 1948 and early 1949 cars the gage rod is located under the floor pan. To reach it turn back the right side of front floor mat and remove the cover which it attached to the floor pan. On late 1949 and all 1950 cars the oil gage rod is located between the battery and engine and may be reached by raising right side of hood.

Remove the oil gage rod, wipe it dry with a clean cloth and reinstall it to its full depth. Remove the rod and note the oil level.

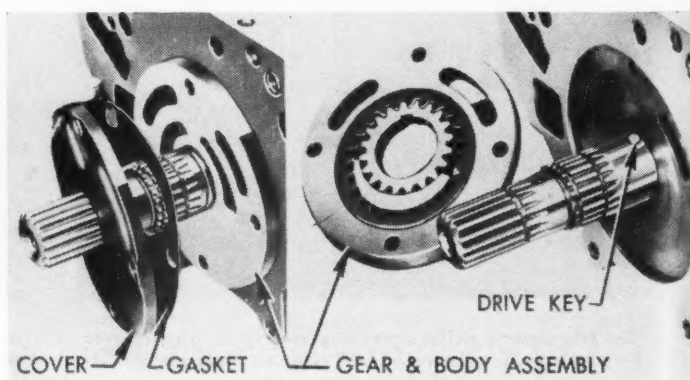
If the oil level is more than one inch below the full mark on the gage rod, add oil as required to

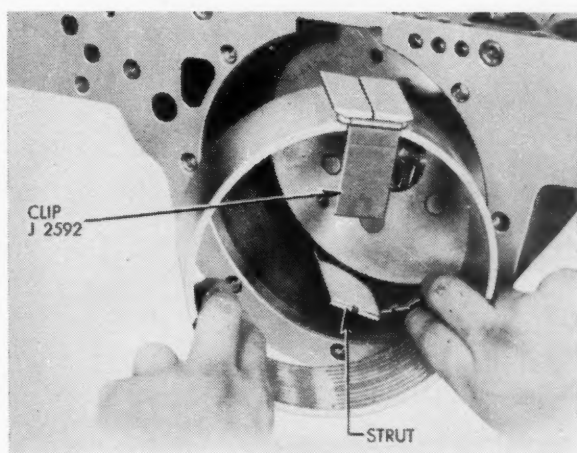
bring the level to the full mark. The final level after adding oil may be slightly below the full mark but should never be above the full mark. The distance between the full mark and the "low" (first type rod) or "add oil" (second type rod) mark on the gage rod is one inch and represents approximately one pint. Some of the first type gage rods do not have a low mark indicated on them. The following oils are approved for Dynaflow drives and no other fluid should be used. Special Buick oil for Dynaflow drives, available through your Buick dealers and automatic transmission fluid type A, available through petroleum suppliers. This fluid must have an AQ-ATF number embossed in the lid of the can for

12. Removing Ratchet Wheel Retaining Ring. With the use of snap ring pliers, slide ratchet wheel off then remove inner retainer ring.

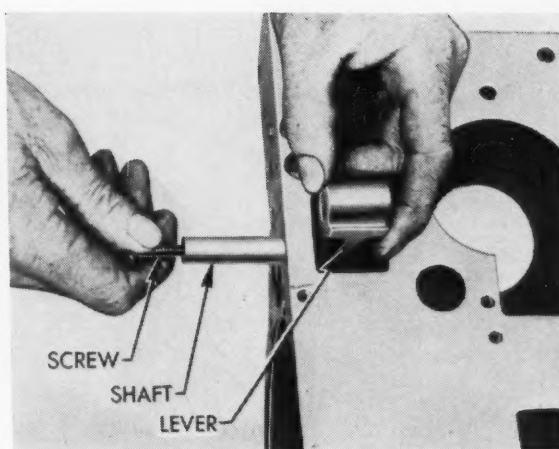


13. Removing the First Type Rear Oil Pump. Remove the drive key and with a pointed tool remove the rubber cushion located under the drive key.



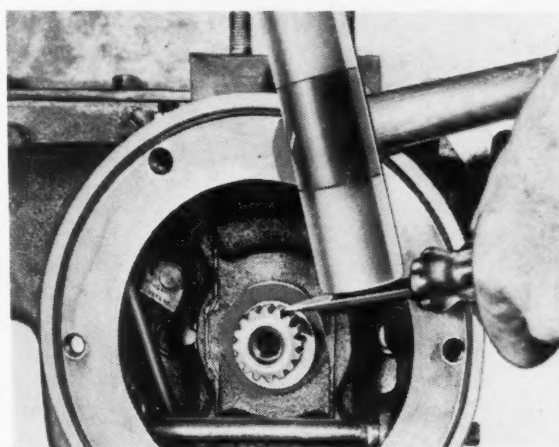


9. Special clip in position for removing band. Block the low band anchor lever down with screwdriver and compress the low band with the operating lever while installing clip across the strut flanges of the band.



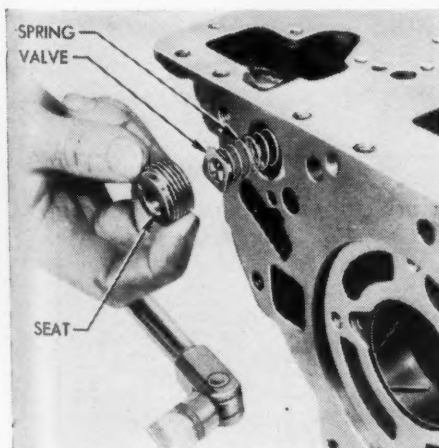
10. Removing Low Band Lever and Shaft. Thread a $\frac{1}{4}$ in. cap screw into shaft and pull shaft as shown.

11. Removing Universal Joint Retaining Ring. With the use of a mallet and large screwdriver, drive out the retainer ring as shown.

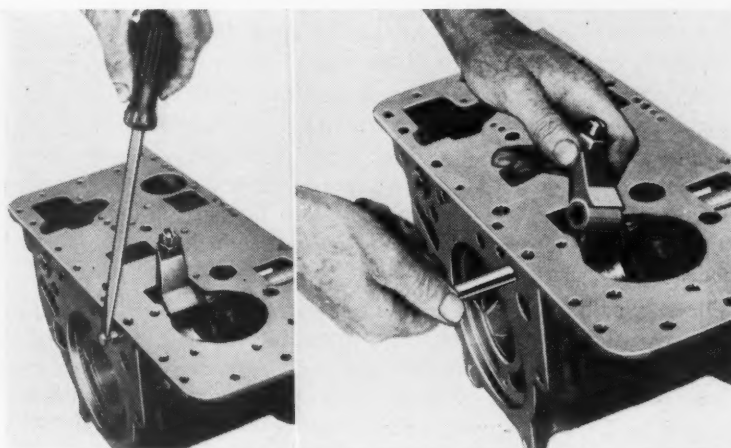


identification. If the oil level is consistently low when checked, indicating loss of a pint or more per thousand miles, the transmission should be inspected for leaks. The factory recommends draining and refilling every 15,000 miles. The transmission must not be flushed when oil is changed, this is very important. Before draining, warm up the transmission, then remove bell housing covers. Loosen but do not remove one converter drain plug which is reached through opening in flywheel. Turn the flywheel until the opposite drain plug is straight down. Remove this plug and allow the converter to drain completely. Remove the drain plug and allow the oil pan to drain com- (Continued on page 82)

14. Removing Lubrication Oil Pressure Regulator Valve. A satisfactory tool can be made out of a drag link socket.



15. Removing Reverse Band Operating Lever and Shaft. Thread a $\frac{1}{4}$ in. bolt into the reverse band anchor shaft and pry out of case as shown.





Shown here is the 1950 Hudson Commodore Custom Eight sedan, which is five feet high and has a 124 inch wheelbase.

Hudson Line Completed for 1950

IN presenting its 1950 Super and Commodore Custom models, Hudson Motor Car Company emphasizes a number of styling changes as well as mechanical improvements. A new four-louvered grille has diagonal twin struts which form a triangle with the illuminated Hudson emblem at the top, centered in the top grille bar. Rear end appearance has been changed by the increase of rear window area by 43.5 per cent on sedans and broughams. The license plate mounting, which is lighted from both sides, is located in the center of the rear bumper. Rear deck lines are unbroken down to the rear deck ornament which includes a plastic name plate.

Refinements in the interior design include a new instrument panel, finished in dark walnut tones with glare-free dials for night driving. Upholstery in the new cars features a three-dimensional pattern. Nylon Bedford cloth is used on the seat cushions and backs of the Commodore models.

Mechanically, the Hudson line has several new features to offer. The ignition system has been improved by virtue of neoprene covered high tension cable which is used on the spark plugs. It is said to be water-proof and resistant to deterioration caused by heat and oil. Spark plug

Restyled grille, increased window area and interior refinements dress up the new Hudson

seals are provided to eliminate starting failure due to high humidity condensation. A newly designed high capacity shunt-type generator is said to give higher output at lower speeds. Valve tappets on the Super-Six engines are of the

(Continued on page 92)

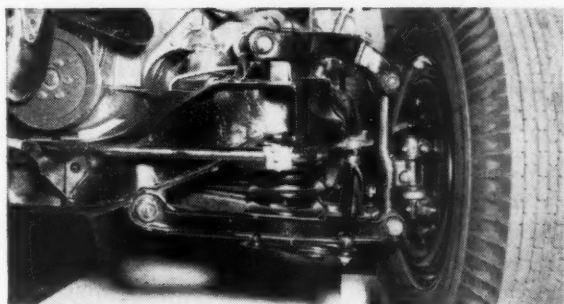
Engine Specifications

	Six	Eight
Bore (in.)	3 9/16	3
Stroke (in.)	4 3/8	4 1/2
Displacement (cu. in.)	262	254
Compression Ratio	7.2 to 1	7.2 to 1
Rated Hp.	123	128



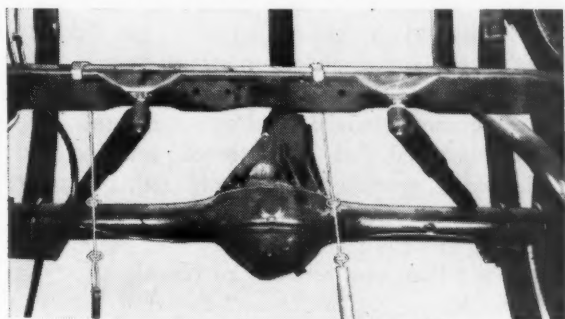
The 1950 Cadillac

Bodies Restyled Shorter Wheelbase



Above. The redesigned front suspension, which adopts a direct acting shock absorber mounted within the coil spring.

Below. The rear suspension has direct acting shock absorbers. Note the relocated driveshaft center-line.



Redesigned front suspension . . . improved
fuel economy . . . increased braking area

THE big story on the 1950 Cadillac line is found in an array of new bodies throughout the models, redesigned front suspension system, detail changes in the rear suspension system, increased braking capacity, some important improvements in engine details, and modulated shifting of the Hydra-Matic.

Perhaps the major mechanical change is found in an entirely new front suspension system. This was brought about through the adoption of direct action shock absorbers, mounted within the coil springs to simplify the mechanical arrangement. One-inch diameter shock absorbers are installed on the 61, 62, and 60S, while the 75 has 1 $\frac{3}{8}$ in. units. At the same time front coil spring diameter has been increased to reduce stresses.

(Continued on page 96)



Pop O'Neill

Larry was a little late getting the right answer to this problem but it suddenly seemed to come to him — right between the eyes



Larry Uses His Head

LARRY TATE was having his troubles. Here he was in a position made from the stuff of his midsummer dreams. The weather was cool and crisp. Puffy white clouds dotted the deep blue sky. Just a touch of sun gilded the cool white snow. The car was a sleek Hudson convertible. The girl was pert, pretty and padded well by the generous hand of nature, and she looked anxiously down from the top of a snow bank with eyes for no one but Larry.

"Can't you fix it?" she asked sweetly.

Larry raised himself slowly from the fender. He dropped his wrench into his tool-box and blew on his aching knuckles to warm them. The skin had come off a couple of them when his feet had slipped on the ice just as he reached for the coil.

"Why can't you fix it?" mocked the girl.

"It's fixed," said Larry glowering. "I'm gonna start it up now. Why don't you go slide down hill on your sticks?"

"They're not sticks," the girl giggled. "They're skis."

"Well then," said Larry, "go ski." It was the first time in his life that he had ever hoped that a dumpling would disappear, but he was cold clear through. And he wasn't too sure that the Hudson was going to run now.

When Pop O'Neill had said that a girl was phoning from MacLaren's Ski Slope and couldn't start her car, Larry had almost broken a leg in his eagerness to get into the tow car. Just before he left Pop had come ambling over. "Better take these," he said. "She didn't seem to know what was wrong but she knew she had a 1948 Hudson. Here's a coil and a condenser just in case."

Larry had taken both and within a half hour he was grateful indeed for Pop's foresight. The car had started, but it sputtered, coughed and died. Larry, working in the cold, had promptly replaced the coil, assured Miss Nancy Appleton that that was the trouble, turned over the engine and found that that *wasn't* the trouble.

"Why Mr. . . . Mr. . . ." fluttered Nancy.

"Tate. Larry Tate," Larry offered.



by Charles M. Kenyon, Managing Editor

"I thought you said it was fixed," she grinned impishly at him.

"Well, uh, that's part of the trouble," Larry hedged, "but I'd better slip this condenser in too."

"I don't know about that," said Nancy shaking her head. "But I do know you'd better do something. It'd never get me home like that."

Larry removed the distributor to a steady stream of comments from above. But the musical tinkle of her voice soon irked him as much as the drip of icy water from the hood to the back of his cringing neck.

By the time he had installed the new condenser he was ready to push the pretty little girl right down the big, steep hill. But as he became gruffer the more she seemed to like him.

In spite of his stiff cold fingers Larry
(Continued on page 110)



"If I had some skis, I would," retorted Larry.

We Need **TRAINED MECHANICS**

A condensation of a talk at the dedication of the Bear

Manufacturing Company's Auto Safety Service School

THE automobile business is an astounding, dynamic business.

People who drive cars get a great thrill out of them because there has never been anything invented that so expands the things that we can do personally . . . go when we please . . . come back when we please . . . and all with the speed of the wind. It is truly the magic carpet of the twentieth century. That is—a magic carpet with wheels—a few unbalanced and some misaligned.

Automobiles have created more than just a new industry. They have started a new way of

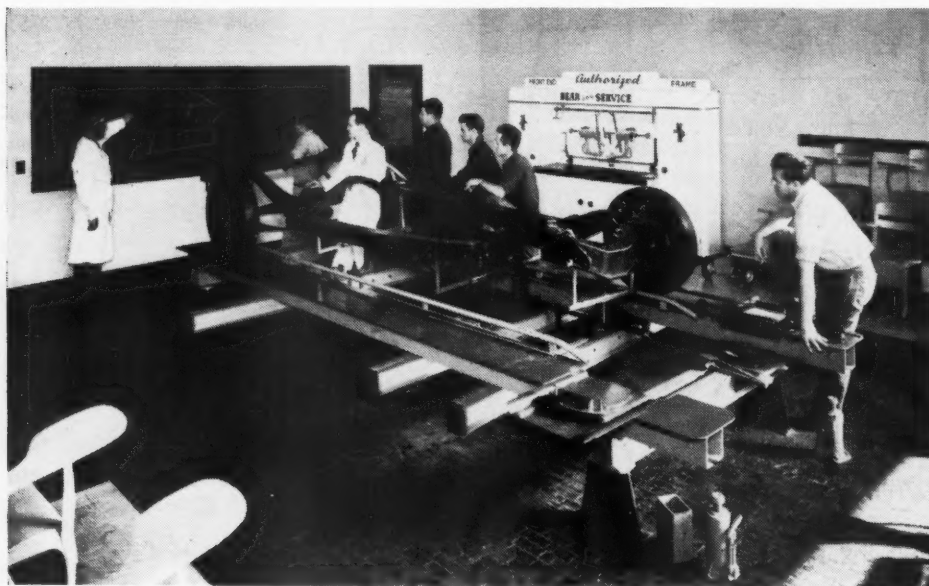
life, creating millions of new jobs and thousands of business opportunities.

Most of those jobs are in small independent enterprises. Over 600,000 small business places, or one in every six in America, are classed as automotive enterprises.

The business of making, selling, servicing and driving motor vehicles employs nearly 9,000,000 people, more than one in seven persons earning a living in the nation.

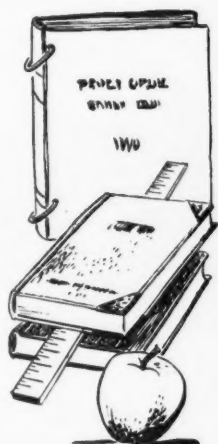
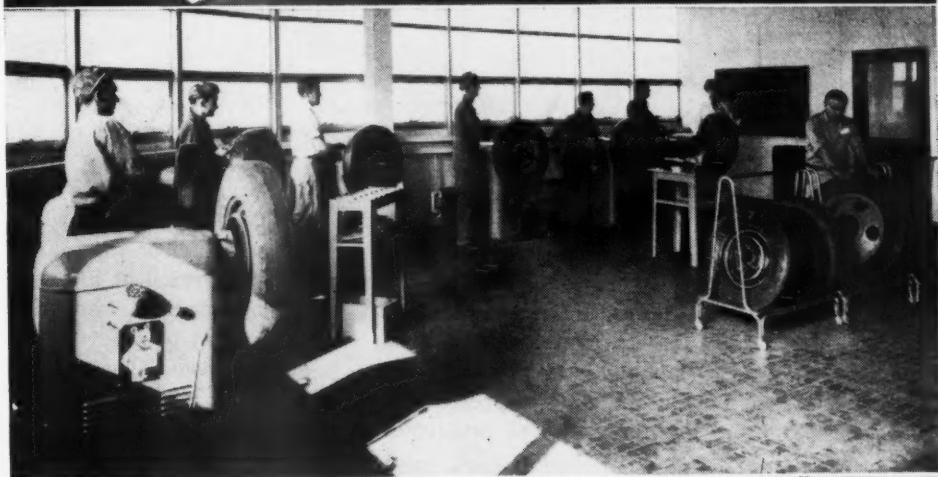
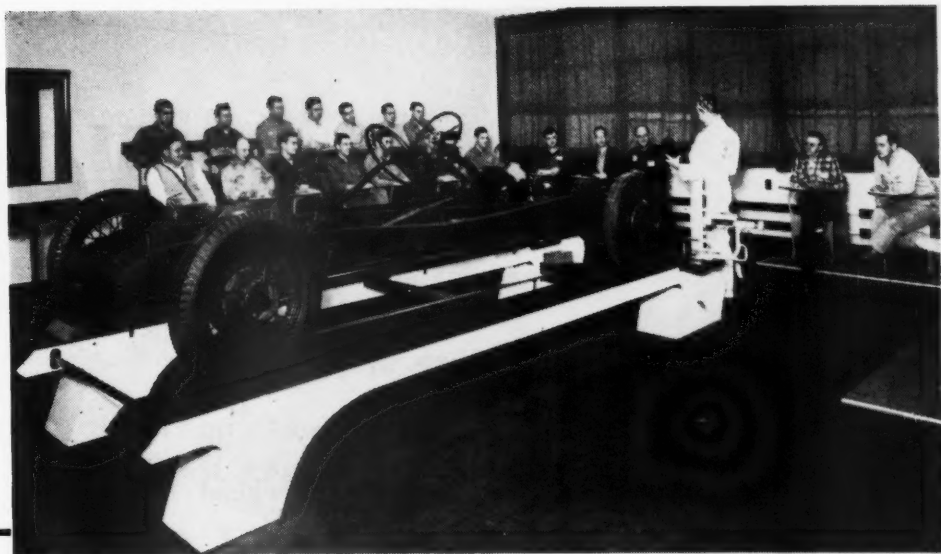
In those early days the technically minded young men found the automobile to be an ideal

(Continued on page 86)



by
P. E. McDonald
Director of Service
Training
General Motors
Corporation

Right. Frame straightening, one of the more popular courses for advanced students.



Top. The basic course is wheel alinement. Here Wilbur Kent, instructor, lectures on steering geometry. Center. A class in wheel-balancing, covering the maintenance and operation of the machines as well as the theory of balance.

Left. Chester South, chief instructor, shows the proper method of placing a gauge against the front wheel.

Price Your Jobs

If automotive businessmen use the wrong costing formula, there is little chance that they can make up for any resulting loss simply by reducing overhead

by Arthur Roberts

WHEN a car dealer or repairman prices his jobs or costs them afterward to determine the net profit per job he should be careful that he does not switch the pricing calculation from the margin on sales formula to that of mark-up on cost. This practice is quite common in this field. To illustrate, we offer the following simple examples. The figures are merely illustrative and are not intended to represent the ratios of any repairman or group of repairmen.

Say that automotive repairman Miller's profit and loss statement figures for the prior year are:

	%
Sales	\$40,000—100
Cost of sales—labor and materials	24,000— 60
Margin of profit on sales	\$16,000— 40
Overhead expense	12,000— 30
Net profit on sales	\$4,000— 10

If Miller sticks to the margin on sales formula when pricing or costing his jobs in the next period, if he does a similar volume and keeps his overhead expense and cost of sales (labor and materials) down to the same ratio, he should net 10 per cent profit—but—if he is not aware of the hazard in switching from the margin on sales formula to that of mark-up on cost, assuming that as long as he uses the right ratio—30 per cent—as shown by his prior statement that this will net him the desired profit, then he will experience a decreased return and he may even end up in the red.

For example, say that Miller's cost of sales (labor and materials) in a subsequent period is \$24,000, but that he switches from the margin on sales to that of the mark-up on cost pricing formula, arriving at his selling prices or profit per job by figuring overhead expense at 30 per cent of the cost of sales and net profit at 10 per cent of this cost. Then this would be the result:

Cost of sales—labor and materials	\$24,000
Add overhead expense—30 per cent of cost..	7,200
	<hr/> \$31,200
Add net profit—10 per cent of cost	2,400
Sales for period	<hr/> \$33,600

Adhering to the right percentage of overhead, but using the wrong pricing or costing formula, Miller calculates his overhead expense for the period at \$7,200 when it is really \$12,000, and so, he short-costs his burden \$4,800. In reality, his profit and loss statement when taken from the books at the end of the period will read:

	%
Sales	\$33,600—100.0
Cost of sales—labor and materials...	24,000— 71.5
Margin of profit on sales	\$9,600— 28.5
Overhead expense	12,000— 35.7
Net loss on sales	<hr/> \$2,400— 7.2

Instead of earning the anticipated net of 10 per cent on sales, Miller loses 7.2 per cent on sales because of the wrong use of overhead and

S for PROFIT

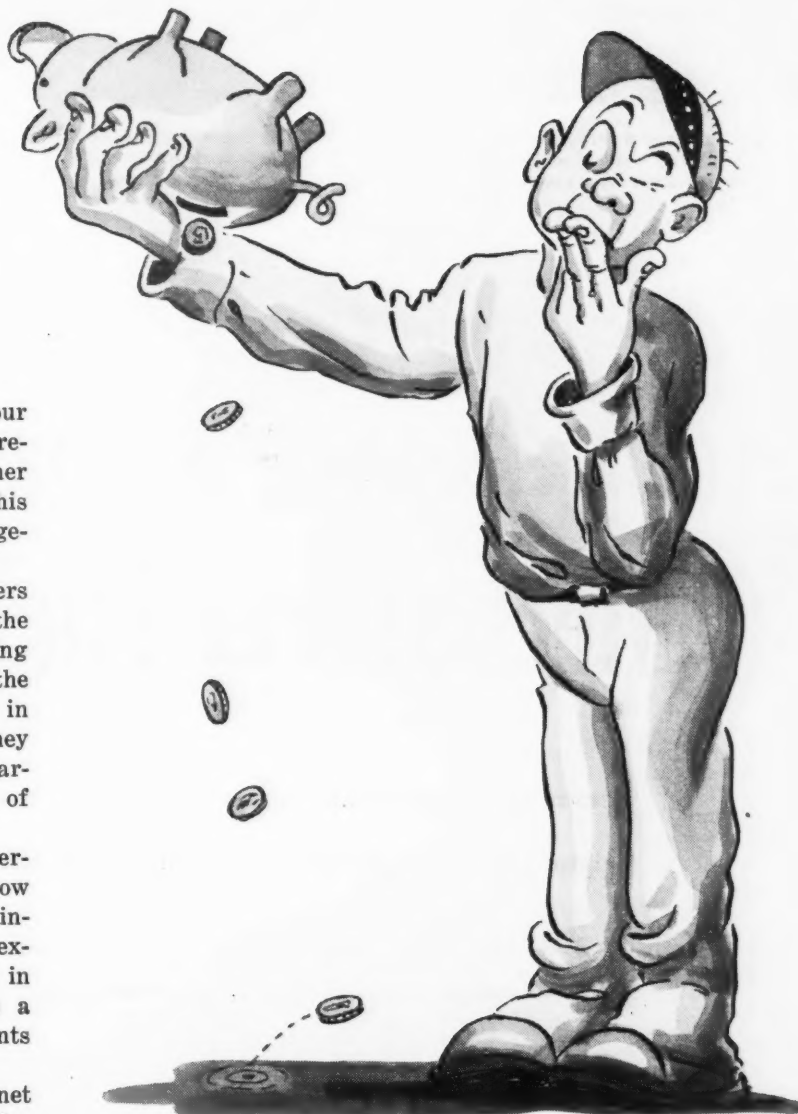
net profit percentages. From our accounting experience, we can report that there are a lot of other Millers in the same boat on this important phase of shop management.

Of course, this illustration covers an extreme case, nevertheless, the use of the wrong pricing or costing formula does play havoc with the profits of repairmen and dealers in their repair departments if they unwittingly switch from the margin on sales calculation to that of mark-up on cost.

To cover his anticipated overhead and net profit, one must know what these ratios are and this information is obtainable from experience figures, the overhead in dollars and cents computed as a ratio on sales in dollars and cents for a prior period.

Knowing the overhead and net profit ratios, it is easy to price sales or cost your jobs afterward by deducting the total of these percentages from sales as 100 per cent:

Sales	100%
Overhead expense	30%
Net profit	10
	—
Margin on sales	40% 40
	—
Cost of sales	60%

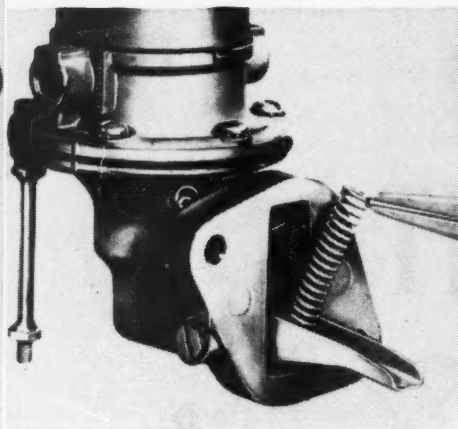


The difference between the overhead and net profit percentages and the sales percentage is the cost of sales percentage, or the cost of labor and materials, in this case, 60 per cent. Knowing the cost of sales ratio, it is an easy matter to arrive at a ceiling price on a job that covers

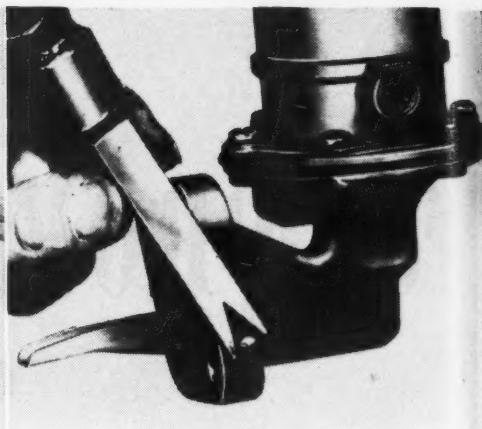
(Continued on page 106)



1. Mark the pump, the body, and the valve housing to facilitate correct reassembly.



2. Remove the cam lever return spring.



3. Remove rivet plug from right side of fuel pump using Carter tool number (T10 9-43).

Servicing the CARTER Mechanical Fuel Pump

Featuring a one-piece diaphragm, Carter's pump is used as original and as replacement equipment on many cars and trucks

(All photographs copyright by Carter Carburetor Corp. All rights reserved.)

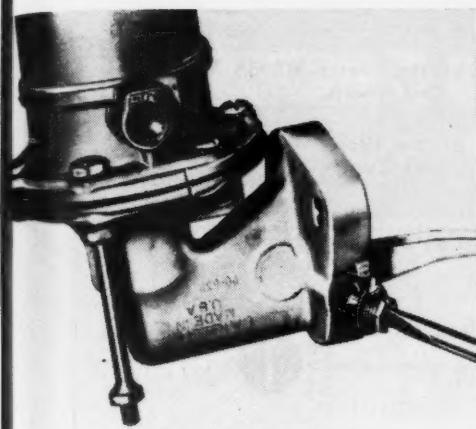
THE Carter M594S mechanical fuel pump is original equipment on Chrysler Six and DeSoto, 1946-47; 1948-49 uses M639S. A similar pump is used on International Harvester truck, KB-1 to KB-7 1948 and 1949. It also may be used for replacement equipment on quite a few other car models, trucks, marine and industrial engines.

This unit features a single-layer diaphragm incorporated in a one-piece diaphragm assembly, thus increasing the life of the pump. Its uncomplicated construction is said to simplify overhaul, the time required for completely over-

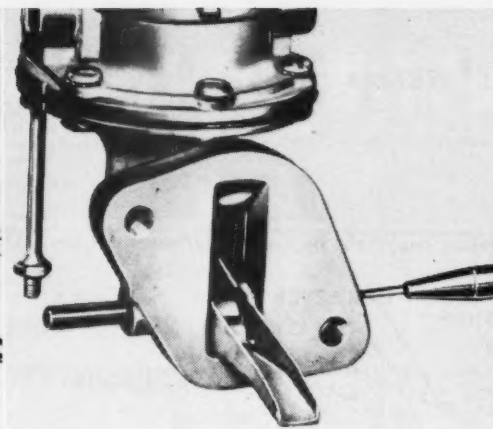
hauling the unit being approximately 20 min. This pump is designed to deliver 25 gal per hr at 1000 RPM engine speed.

Before the pump is removed from the car, it should be tested for volume, vacuum and pressure. On the volume test, when the unit is operating properly, it should pump 1 qt of fuel in 1 min or less at an engine speed of 500 RPM. Checking for vacuum, on an accurate vacuum gage, it should draw 10 in. of mercury at 500 RPM engine speed. The pressure test is made with a suitable pressure gage connected to a "T"

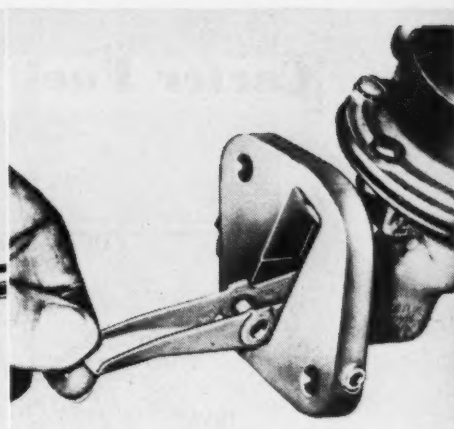
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4. Remove cam lever pin plug and washer.



5. With the use of a small punch, remove the cam level pin.



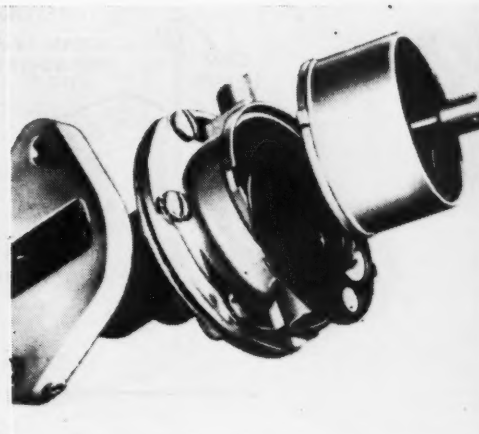
6. After the cam lever pin is removed slide out the cam lever and spring retainer.



7. Remove vent retainer ring and lift out packing.



8. Remove the bowl cover, gasket and strainer. This should be removed periodically for cleaning the strainer.

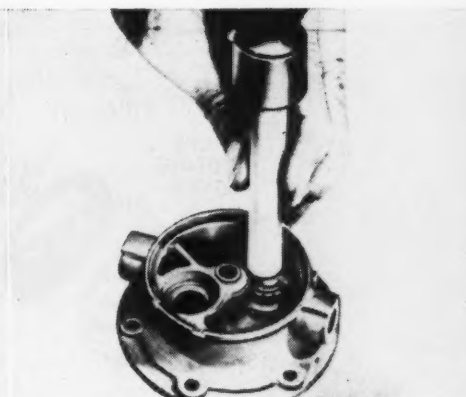
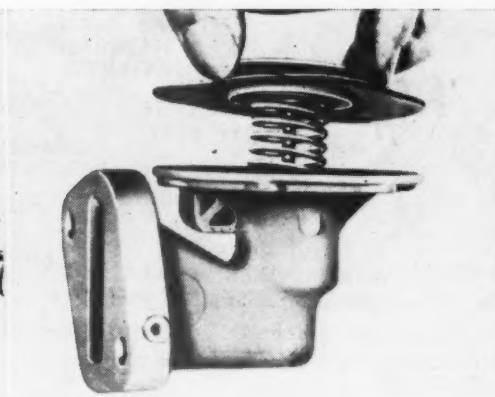
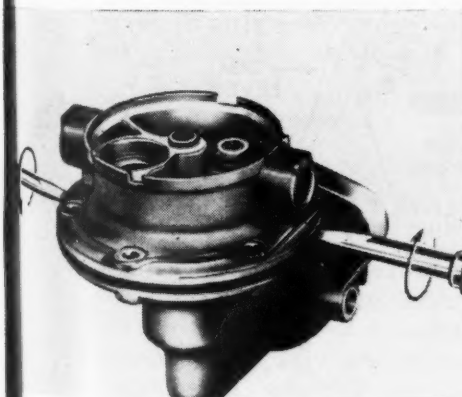


9. After bowl cover is removed, unscrew the bowl retaining screw and lift off the bowl and outlet airdome diaphragm.

10. Remove the pump valve housing screws and insert screw drivers at flats of diaphragm, then twist screw drivers.

11. With pump valve housing removed, lift out the one piece diaphragm assembly. When assembling diaphragm, place flats toward the ports.

12. Remove both valve cage assemblies using special tool furnished by Carter Carburetor Corp.



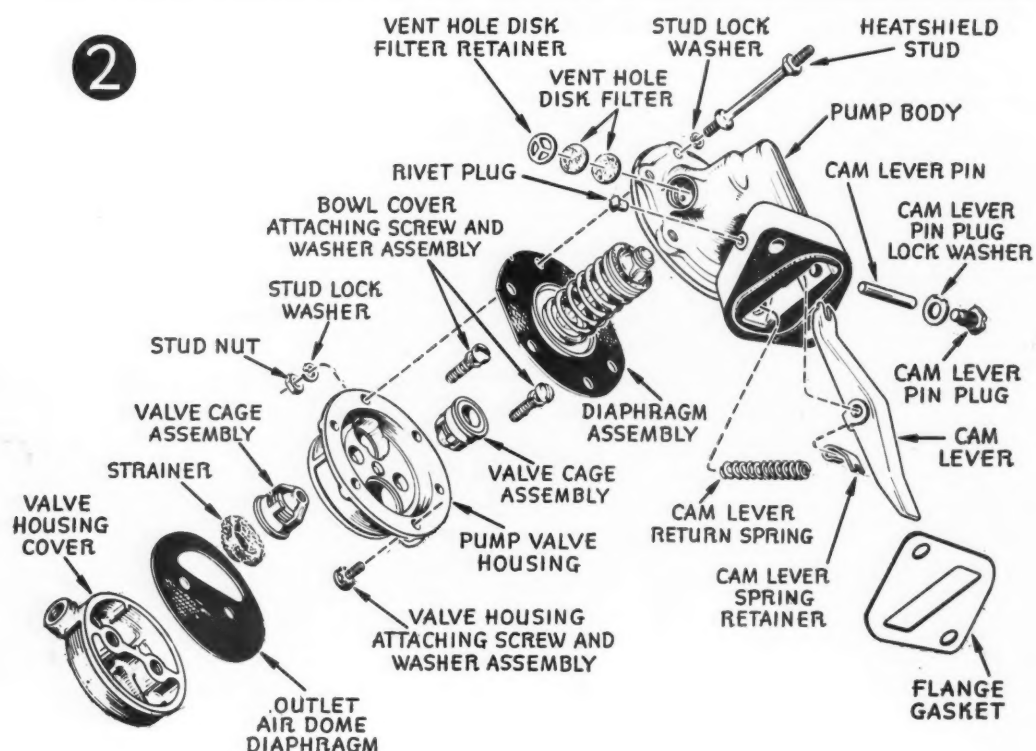
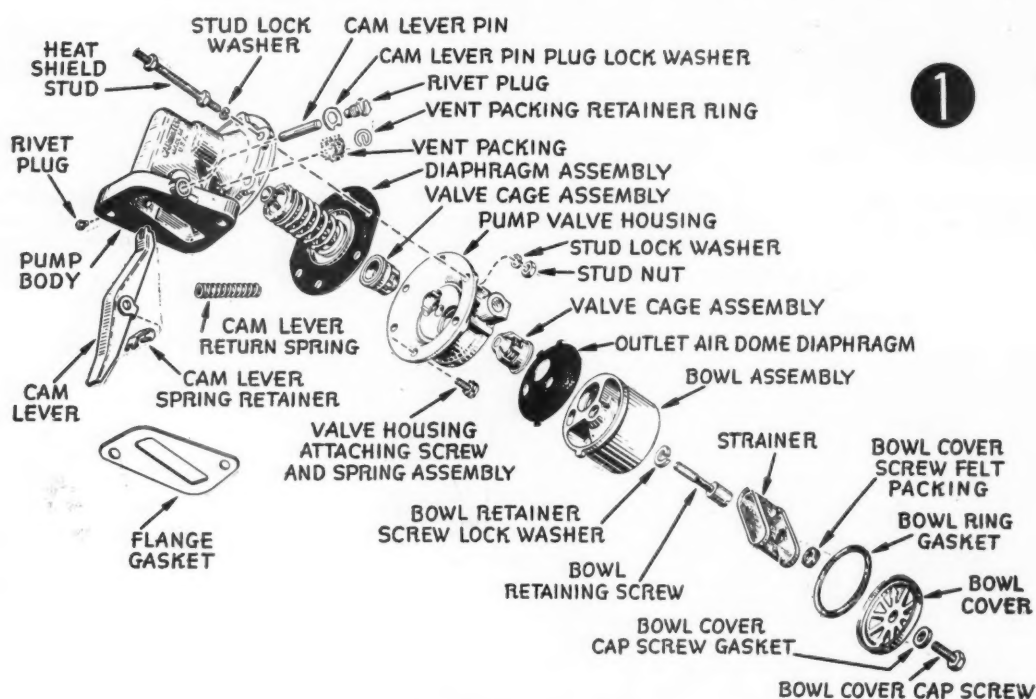
Carter Fuel Pump . .

Continued from Page 53

1. Exploded view of the Carter M593S Mechanical Fuel Pump.

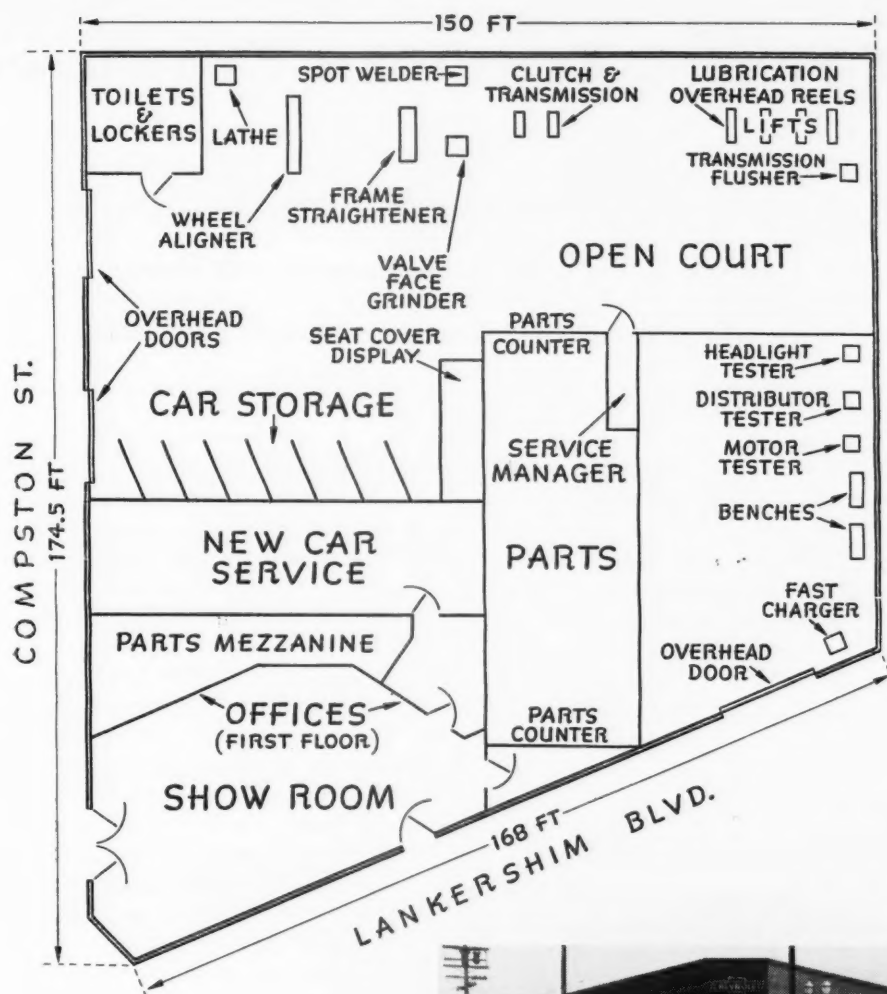
2. Exploded view of the Carter M594S Mechanical Fuel Pump.

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FLOOR PLANS

FOR BETTER SERVICE



Hollywood Shop Features Extra Large Lube Department

THE service department of the Martin Pollard Company, Chevrolet dealer of North Hollywood, Calif., features an extra-large lubrication department. This section has four twin-post hoists and 17 overhead reels.

According to Cliff Van Pelt, the service manager, the firm normally handles about 35 lubrication jobs on a Saturday morning alone, and the

30 shop employees process 750 orders monthly.

The shop is laid out with the heavy work, frame straightening and wheel alignment in one corner, and a 40 ft. by 75 ft. body and paint shop in another building across the street. Tune-up and inspection work is at the other end of the building from the heavy work, and tie-ups are minimized by conveniently located doors.

Appearance Reconditioning

Creates Trade-In Turnover

Consider how "dressing up" of the slow moving models in the used car department can change a growing headache into a potential gold mine

SOME dealers, cautioned by the disadvantage of high used car inventories, have adopted packaged beauty treatments to increase the sales turnover. This procedure helps avoid the tie-up of capital involved in a slow-moving lot, eliminates a storage problem, and promotes future new-car customers.

Complete reconditioning of current and year-old models may be done at a negligible cost. For older models, the increased demand may create an additional price well in excess of the actual restoring cost, and still be properly priced at the going market rates. The market demand of the automobile is used to determine the value of restoring the appearance, or the extent of improvement.

A careful estimate should be made of the cost of restoring the appearance, and damaged body parts should be carefully analyzed to determine whether it is profitable to repair or to replace. When a certain point has been reached in the repair of damaged parts, the cost will equal that of a new part, and any repair beyond that point will result in a much higher cost. It is a matter of cost in deciding whether replacement or repair is the correct way to do the job.

The exterior of the car should be thoroughly checked for the sparkle and luster of the finish, seam corrosion, sagging doors, corrosion of grilles or trim, rusted or damaged door and body panels, and condition of fenders. Minor damage may be of the type that can easily be snapped

back into place and smoothed off. If not, it should be straightened and bumped out to the original form of smooth, graceful lines. Bad rips, tears, or folds that may prove impractical to bump out may be repaired by replacing a section or patching. Body replacement parts are available for rocker panels and the lower ends of door frames and posts that frequently rust out.

Correcting seam corrosion may be very expensive, and here market value of the car will have its greatest effect in determining whether it is profitable to remedy the condition. Along the edges of rocker panels and fenders where the metal has not deteriorated too much, the sections may be reinforced by welding. Extreme rust or corrosion may be remediable by welding in metal patches, or by sectional repair. Here replacement parts must be had, or new metal cut to shape and welded in. The defective part should be removed, not welded over.

Slight oxidation or rust must be well sanded and cleaned. All rust, moisture, grease, and other oily materials should be removed from the metal. Grease and rust removers should be used to insure thorough cleaning. Immediately after cleaning, the bare metal spots should be primed with a combination primer-surfacer in preparation for painting.

The condition and composition of the finish

by

Arthur H. Fedel



Shabby covers and dirty upholstery tend to turn prospective customers away



Properly fitted seat covers and a clean interior give a fresh appearance

A pitted grille or bumpers and smooth tires offset the attraction of a good finish



Good rubber and sparkling finish are points of attraction for used car buyers

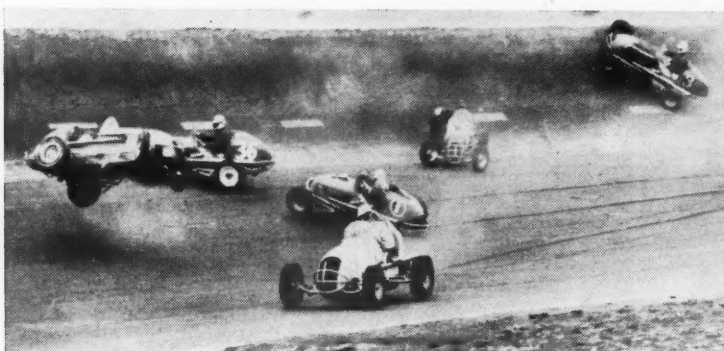
must be determined in order to know whether to spot paint or spray the entire panel. Spot painting should never be done on metallic finishes or on a badly faded section. Where the area is especially visible, light of different intensity and direction will high-light these spots.

Sagging doors are very noticeable and detract much from the flow of body lines. Alignment should be almost perfect on light-colored cars as door alignment is more noticeable on them. Sometimes the door can be brought back to alignment

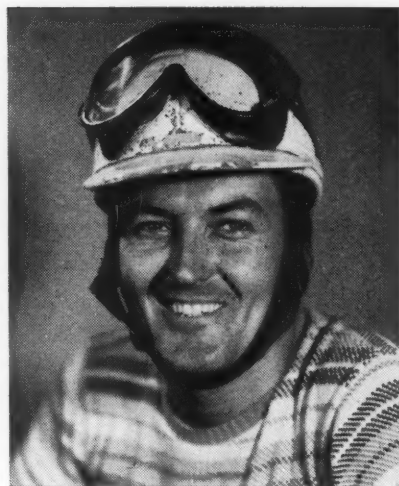
by tightening the hinge screws, or by replacing the hinge pin. Slightly oversized pins should be used to compensate for the wear of the hinge holes. Mis-alignment or a badly worn striker wedge on the door may also cause sagging. The striker wedge must just fit snugly into the door opening recess before the door can be properly lined up.

Damaged or missing chrome ornamentation should be replaced. Chrome moldings cannot be

(Continued on page 94)



The driver of the car at the left suffered a possible skull fracture. When the dust cleared there were six cars piled up



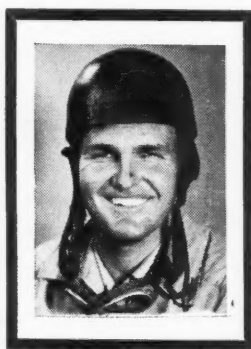
Johnny Parsons, National A.A.A. champion

RACING for 1950

A new record of 125.78 mph for 500 miles and 136.43 mph for one lap to be set at Indianapolis

WITH the many factors which have been improved during the past year, the above speeds may even be exceeded. Chassis and engines have been improved, as has the track surface. It is expected that the next Indianapolis classic will bring in new records.

The officials of Indianapolis Speedway have disclosed that race cars with Diesel powered engines will be allowed to enter the 1950 contest. The first Diesel entry to be made for the 1950 classic is a rear drive, six cylinder, 4-cycle Cummins Diesel Special, a super-charged creation with a piston displacement of 401 cu. in. Jimmy Jackson of Indianapolis has been nominated as the driver. Four changes have been made on the 500 mile entry blank. Cars must start the race with the same gear ratio and tire size as was used in qualifying and time trials. Alternate starters



The late Rex Mays

will be permitted if any of the 33 fastest cars are unable to race. Qualified drivers will not be permitted to compete in any other racing event during the 24 hour period preceding the 500 mile classic. All equipment used in the pits must not exceed 60 in. in height from the pit floor.

Lou Moore, whose Blue Crown Specials have won the past two races, has a new car to be entered at the oval this year, to increase his list of entries to four. Bill Holland and George Connor will drive the same cars as last year, and Lee Wallard and Tony Bettenhausen will be new members to the family.

Johnny Parsons of Van Nuys, Cal., who wound up as the A.A.A.'s national champion of 1949 by winning five national championship races and finishing second at Indianapolis, will be driving the same Kurtis Kraft Special as last year, entered by Ed Walsh of St. Louis, Mo., vice-president of Kurtis Kraft, Inc. A second Kurtis Kraft entry will be driven by Fred Agabashian.

Coming to the midgets, Sam Hanks drove his way into first place last year to become national A.A.A. champion. It was a good year for the midgets, with a gate of 1,228,138 spectators. The coming year is sure to produce hotter midgets and many new records, what with increased compression, more entries of supercharged cars and increased use of torsion suspension.

Here's How To Install Overdrive On Plymouth

AN overdrive unit, Chrysler part number 865161 can be installed on Plymouth passenger cars from 1940 to 1948 by using the instructions, drawings and part numbers given here.

For best results the rear axle gear ratio should be 4.3, which is standard in some models. No changes have to be made in the drive shaft. The overdrive unit is the same length as the extension housings used on the transmission.

On 1946 to 1948 cars the transmission case must be drilled and tapped or replaced with a new case, Part No. 853853. The clutch housing must be drilled and tapped ($\frac{3}{8}$ in. thread) for the lockout control bracket. This operation must be performed while the transmission is out.

A different brakeband is used for the overdrive hand brake. The relay is located on the dash under the hood. A bracket for the ground switch on the throttle linkage must be made up by hand as different models require different linkage setups. On '46 to '48 models use the 41 throttle rod which is spring loaded and allows the linkage to

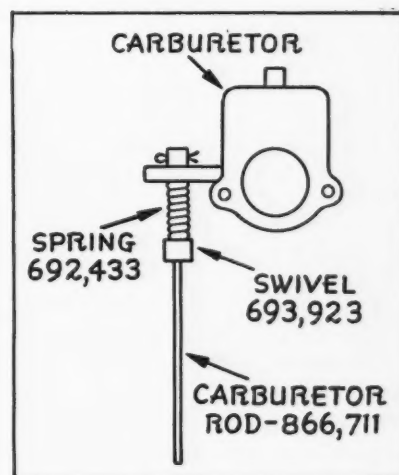
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Any 1940 to 1948 Plymouth that comes into your shop is a potential customer for this job, which has been proved satisfactory

by Floyd M. Fike

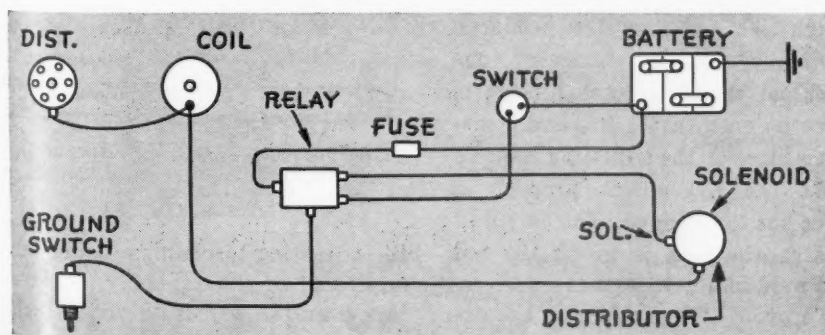
Parts to be Used

865161	Overdrive unit
853891	Brake band
124949	Nut
693923	Swivel
681349	Grommet cover
903799	Grommet
863191	Trunnion
854803	Clutch housing bracket
686626	Bolt grommet
853894	Gasket
855558	Control cable
692433	Spring
869150	Knob
869757	Steering post bracket
853892	Support (brake band)
853881	Bracket
120370	Nut
691687	Ground switch
866711	Throttle rod
670752	Oil Seal
HR4201S	Relay (Auto-Lite)
SSB4001	Solenoid (Auto-Lite)
631815	Swivel

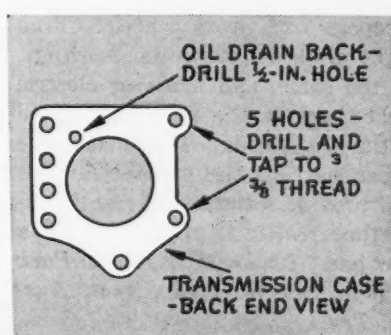


Above. Bracket, spring and throttle linkage case, showing location of holes.

Wiring diagram showing the related parts of the overdrive electrical system. Note the simplicity of the hook-up.



Below. Back end view of the transmission case, showing location of holes.



SHOP KINKS

\$25

FOR THE BEST KINK
PUBLISHED EACH MONTH

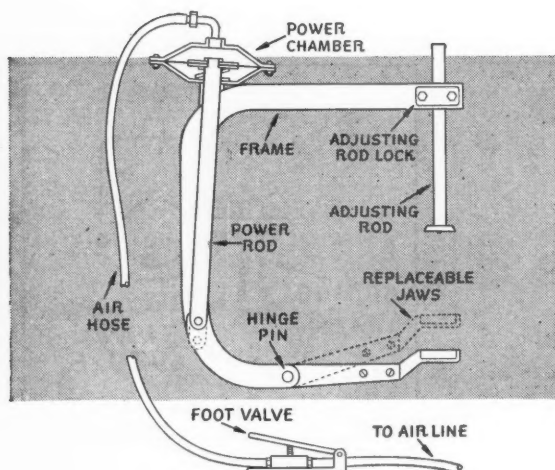
\$5

FOR ALL KINKS
PUBLISHED EACH MONTH



Have you figured out a short cut for doing a job, devised a special tool to make a job easier, or developed any other helpful idea? Your Shop Kink may be worth five, possibly 25 bucks. Write it or draw it—just make it plain, not fancy—and send it to Motor Age. Of course, we don't accept anything previously published.

BEST KINK OF THE MONTH



Power Operated Valve Lifter

Any standard valve lifter can be made into a power operated tool by using the method shown at the left. The power chamber can be adapted from a discarded unit of the type used on air brakes. The foot valve provides positive control and frees the hands for holding the lifter. The handle is removed from the tool so that the power chamber can be mounted on the frame. *Emerson J. Wilcox, 7153 Division Rd., St. Clair, Michigan.*

Making Creeper Wheels

From Throw-Out Bearings

Here's a good way to repair creepers with worn wheels. Find eight discarded throwout bearings, all the same, and braze or electric weld them at the points indicated in the illustration. Then attach the upper part to the creeper, and it will provide satisfactory results until the creeper is replaced with a new one. *Louis Govea, Hyde Park Garage, 513 W. 43rd Street, Austin, Tex.*

Repairing Worn Linkage

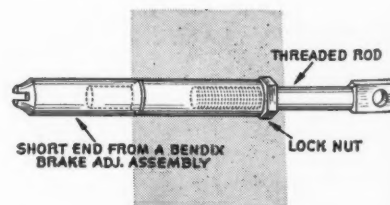
After Chrysler Clutch Job

Sometimes after completing a clutch job on Chrysler products, especially DeSoto taxicabs, one finds out that the clutch linkage is worn as much as $\frac{1}{2}$ in., and sometimes more on the adjusting rod. To make the rod adjust properly a piece has to be added. The only way this can be done is to cut the rod and weld in a new segment.

To avoid this problem or the ex-

pense of new linkage I have found a quick and workable method.

From an old Bendix brake I take



the adjusting mechanism using the small end of the assembly. I place this over the adjusting rod, which

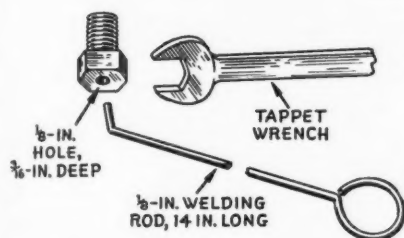
now fits perfectly for a spacer. This now gives me a good $\frac{1}{2}$ in. or more toward my adjusting rod and enables me to adjust my clutch properly.

After the clutch wears sufficiently this addition may be removed from the rod without any damage to the rod or linkage. *Harold Goetz, Schallnam Service Station, Northern Blvd., Cor. 61st Street, Woodside, Long Island.*

Replacing Oil Pan

Cap Screws

To replace those four hard-to-get-to cap screws in the front of the oil pans on Pontiacs, Oldsmobiles and other cars, drill a $\frac{1}{8}$ in.



hole in the center of the cap screw about $\frac{3}{16}$ in. deep. Then use a $\frac{1}{8}$ in. welding rod about 14 in. long. Grind one end enough to turn free in the bolt and bend the rod as shown. Use the rod to hold the bolt while it is turned in with a long tappet wrench. *K. B. Gillespie, Gillespie Garage, Box 533, Tazewell, Virginia.*

How to Make a Fluid

Clutch a Solid Drive

I have a shop kink that I tried out on a 1942 Dodge Fluid Drive that had gone bad. The customer wanted to do away with the Fluid Drive making it conventional.

What I did was this. I installed a new bronze bushing in the runner hub and packed it with graphite grease, then I took two bronze welding rods $\frac{1}{8}$ in. and welded the clutch pressure plate to the fluid housing after first placing same in a press and welding the two sections opposite each other on opposite sides, using the same amount of rod on each side. I reassembled the same and was very pleased that there was no chatter or any disagreeable failures of any kind

which ordinarily develop in clutches. *Ed Burdett, Burdett Garage, 1224 Huntsville Road, Birmingham, Alabama.*

Elimination of Ringing in K-F Propeller Shafts

The factory has received reports from the field that some Frazer (F-47) cars (without overdrive) and some Kaiser (K-100) cars, equipped with Mechanics type propeller shafts, have evidenced a bell ringing noise in the drive line.

A new damper has been developed and is available which will permanently eliminate this condition. This damper is a steel disc that is installed on the front drive shaft companion flange, just back of the transmission. The remedy is affected by adding weight and thus deadening the noises. Installation of this disc is relatively simple and is as follows:

1. Remove (4) nuts, lockwashers, and bolts which hold universal joint to front companion flange on transmission main shaft.
2. Lower front propeller shaft.
3. Remove companion flange nut, lockwasher, and flat washer which hold companion flange to transmission mainshaft. Now remove the companion flange.
4. Assemble the damper hub over the companion flange being sure that the outer edge of flange fits exactly into recess of damper. Line up all holes in companion flange with those in steel damper, and install (4) special cap screws which are supplied with new unit, and use the original lock washers.
5. Install companion flange and new damper assembly on main transmission shaft. Torque tighten companion flange attaching nut to 120-125 ft. pounds.
6. Reassemble front universal joint to the companion flange.

Vibration Eliminated on

A Nash Ambassador

This is a method to eliminate motor vibration on a 1941 Nash Ambassador when at speeds between 45 and 50 miles per hour or over. After checking all other vibration causes such as bad vibra-

tion dampers, motor mounts and clutches, I have found that by lining up the differential housing and propeller shaft, tightening the rear spring saddle U bolt and spot welding the saddle to the axle housing, vibration will be eliminated. *Robert J. Felthaus, Stanley's Auto Parts, Inc., 719 Sycamore Street, Cincinnati 2, Ohio.*

Crochet Needle Removes

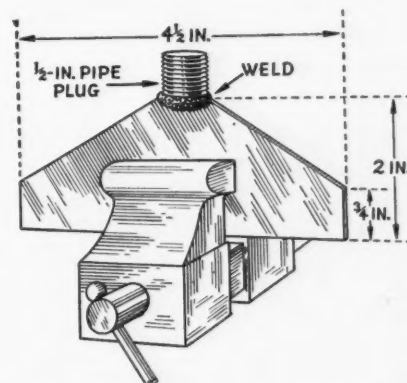
Master Cylinder Piston

In overhauling the master cylinder on Chrysler products from 1942 through 1949 the piston sometimes is difficult to remove without removing the cylinder from the car. A No. 10 crochet needle may be used to accomplish this removal. Place the small hook through one of the small holes in the piston and remove. *Melvin Gilbert, Service Motor Company, Irvine, Ky.*

Tool for Holding Transmissions While on the Bench

I have found that in overhauling transmissions on the bench it is sometimes difficult to hold the case steady while inserting gears and bearings, so I devised this tool or holder to hold the transmission in the vise. I hope others will find it as useful as I have.

Weld a $\frac{1}{2}$ in. pipe plug to a $4\frac{1}{2}$ in. piece of $\frac{1}{2}$ in. bar iron 2 in. wide and cut as illustrated. By screwing the plug in either the fill plug or drain plug hole and clamp-



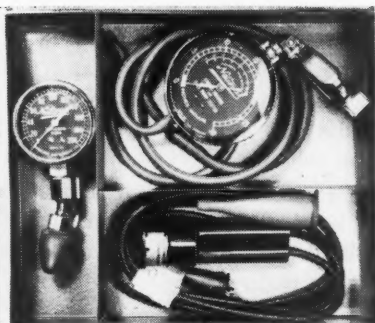
ing in the vise, it amply pays for the time and effort to make in time saved in assembling the transmission. *William Chandler, c/o E. & S. Garage, 25914 Plymouth Rd., Detroit 28, Michigan.*

NEW Products

SHOW WINDOW

145. Engine Testing Set ▶

National Machine & Tool Company announces a tune-up set, which features a special short shank compression tester and a re-designed vacuum gauge with a universal jointed spring clip holding device. The clip is claimed to permit the gauge to remain in an easy-to-read position regardless of where it is attached. The new timing light has a neon element that can be replaced just like a standard light bulb.

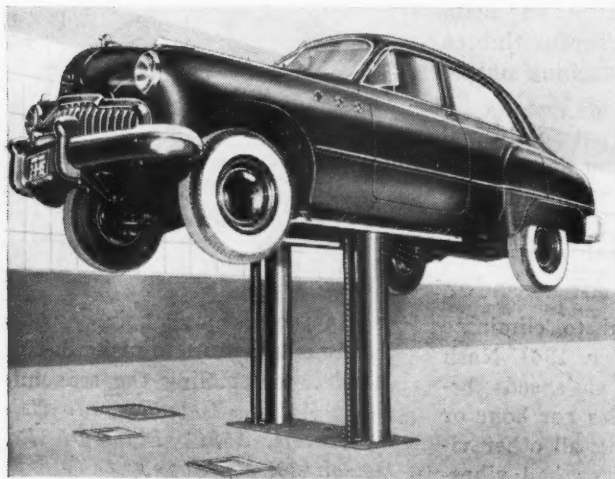


parallel frame contact supports, each of which is attached to a self-synchronized hydraulic power cylinder.

146. New Type Hoist ▼

Globe Hoist Company is manufacturing a new model lift, known as the F-27 "Frame-Kontakt" Hoist. It lifts an auto by its frame to provide unobstructed accessibility.

This Globe hoist consists of two



147. Fluid Dispenser ▼

The R. M. Hollingshead Corp. is marketing the Whiz Auto-Flo Brake Fluid Dispenser, which fits any standard size gallon can. A metal siphon tube attached to a

threaded cap is inserted into the can and screwed tight. Also attached to the screw cap is a rubber bulb which is squeezed to build up pressure in the can, causing brake fluid to flow through the hose.

148. Chrome Ring ▶

The Hastings Mfg. Co. announces a chrome facing for Hastings steel-vent piston rings used in heavy-duty sets. Advantages claimed for this ring include longer life, less cylinder drag and greater resistance to scuffing. Hastings chrome sets with chrome-faced steel-vent and its companion ring, the Chromelube, are available for nearly all Hastings truck and tractor sets and for 16 passenger cars.

149. Timing Light ▲

The Sun Electric Corporation



**MAIL THIS
COUPON
FOR MORE
INFORMATION**

For further information on any of the products mentioned in Motor Age write the code number of the product in the space provided below. Don't forget your name and address.

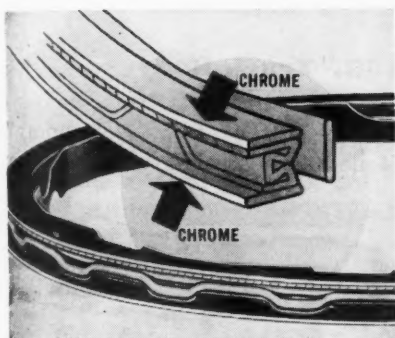
Frank P. Tighe, EDITOR
MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

Code number of New Products

Your Name Your Title

Your Company

Address
(STREET & NO.) (CITY) (ZONE) (STATE)



announces a new Power Timing Light, featuring a brilliant white focused beam. The light, which is described in a new catalog released by Sun Electric, is available for all standard voltages.

150. Drum Lathe

Barrett Equipment Co. is featuring the Drum-Dokter, claimed not only to machine, grind and

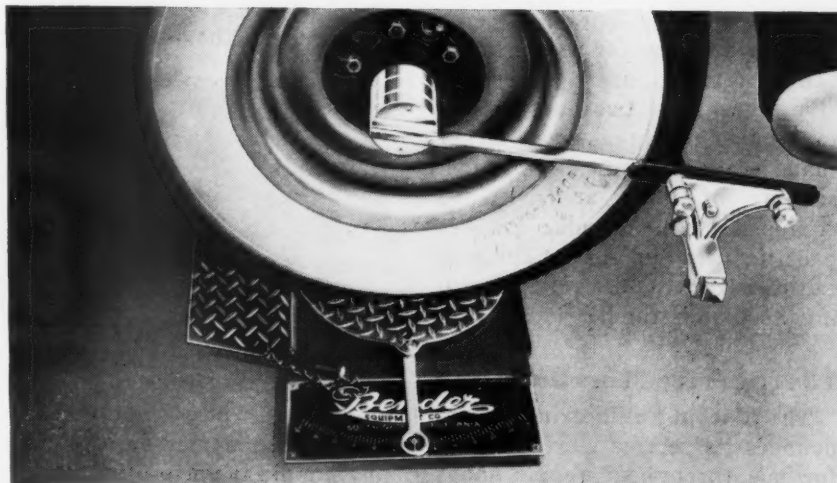
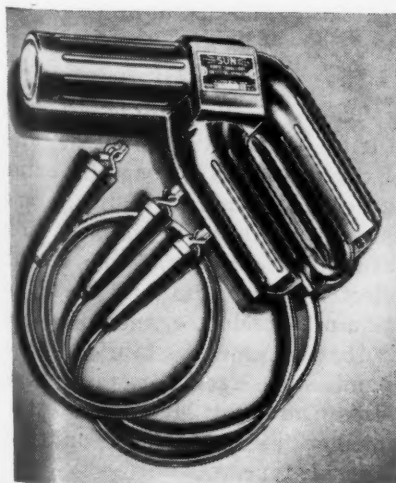
hone brake drums, but provide the shop with facilities for doing other jobs.

The machine features a micrometer dial indicator for checking drums, both before and after reconditioning, thus permitting the mechanic to show the customer the condition of his brakes in selling drum service.

The Drum-Dokter also includes honing attachment, tool sharpener, hone drive, reamer drive and chuck, disc brake housing attachment, and a flywheel clutch facing attachment.

151. Toe Gauge

The J. H. Bender Equipment Co. announces a new Magnetic Toe Gauge which permits micrometer checking for "toe in" and "toe out" (Continued on page 64)



New Products Continued from page 63

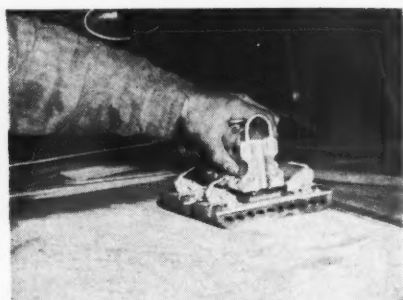
out" from the front of wheels. According to the manufacturer this new gauge eliminates the trouble of moving bar from front to back of wheels, does away with scribing of tires and the necessity of moving the vehicle backward or forward. Magnetic pointers snap onto the machined surface of the hub ends. The bar is set in front of the wheels and remains in front. All readings (toe in and toe out) are shown on the micrometer near the right front wheel.

152. Brake Drum Spring

Perfect Parts, Inc. has developed a new brake drum spring, designed to eliminate screeching of brakes. The springs are furnished with clips to be used to hold the spring securely in position. The clips are said to be the same in design as those used by car manufacturers.

153. Pneumatic Sander

The Sundstrand Machine Tool Co. announces the Sundstrand Model 1000 pneumatic sander, a

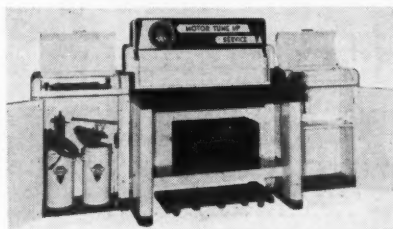


light-weight air operated hand sanding machine for use on auto-body and truck panels. The abrasive area of the two pads is said to be two to three times larger than hand blocks, enabling fast sanding of large areas. When equipped with tubular rubber pads, fenders and curved surfaces can be covered effectively, according to Sundstrand.

154. Service Merchandiser

The Lincoln Engineering Co. announces its service merchandiser, for use throughout repair shops

and service departments. Primary features of the merchandiser design are easy accessibility to me-



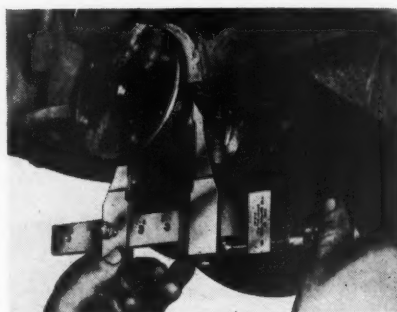
chanic's tools and working accessories, convenient storage space, compact construction and neat appearance. Another feature of this merchandiser is that in addition to the fundamental unit, the dealer can select a combination of service merchandiser component units he desires, and arrange them to best serve his service department requirements.

155. Additive Oil

The Watts-Wagner Co. is featuring its Friction Eez Oil, a crankcase and gasoline tank additive that is designed to cut friction and wear. Among the claims made by the manufacturer for this oil are an immediate improvement on engine operation, a deposit of friction and heat resisting film on moving surfaces, ability to remove carbon, gum and sludge, improved action on hydraulic valve lifters, and increased horsepower, by eliminating sluggishness.

156. Main Journal Mike

The Central Tool Co. is marketing the Central Main Journal Micrometer, No. 510 MBM. With this instrument, the manufacturer



states, it is possible to measure the exact diameter on any crankshaft journal up to 5 in. diameter

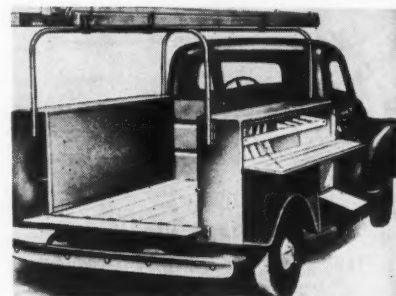
without removing the crankshaft from the engine. The micrometer reads directly in thousandths of an inch over its entire range of 0 to 5 in. The amount of journal wear or out-of-round is easily detected. There is said to be no guesswork when installing new main bearing inserts as the exact size of the insert required is known without resorting to fit-and-try methods.

157. Shift Lever Handle

Champ - Items, Inc., announce their No. 460 Gear Shift Lever Extension Handle to facilitate gear shifting on Chevrolet cars. This handle is made of polished aluminum and has an overall length of four inches.

158. Truck Body

Artisan Products, Inc., has introduced the new "Economy" Model 60 all-steel service body for



mounting on to any late model ½-ton pick-up chassis. This 75-inch long service body is designed for resale by dealers to electricians, plumbers, television installers and many other trades who carry tools and materials to and from the job. This body is designed for shipment to dealers partially knocked-down.

159. Fire Extinguisher

The R. E. Dietz Co. is manufacturing the Dietz Volunteer Fire Extinguisher. This one pint extinguisher is said to quickly and surely smother all kinds of fires at their inception, gasoline, oil and electrical fires. Its fluid is said to be a non-conductor, and will cause no harm to metals, fabrics or the hands and face. It projects a stream of fluid 20 ft. The extinguisher fluid is of the carbon tetrachloride type.

CLEARING HOUSE

FOR SERVICEMEN'S QUERIES



TRouble SHOOTING WITH JACK MONTGOMERY -- TECHNICAL EDITOR

When a job stumps you, write Readers' Clearing House. Besides receiving aid yourself, you may help someone else in the same situation. Among the letters sent in recently, these problems came up:

- Bearings burn out in Ford engine • Oil leaking past timing cover seal
- Cadillac cuts out • Ford burns oil • Studebaker runs hot • Packard oil pressure runs high • Buick chatters • Nash vibrates over 60 mph
- Dodge hard on clutches • Cadillac runs on four • Chrysler leaks grease out of rear wheel.

Bearings Burn Out In 59A Ford Engine

I have a Ford hot rod with a 59A block. I used the old type oil pump, and my bearings ruined the crankshaft and two rods and pistons.

My trouble is that my bearings pit and break up and a rod goes. In this 59A Ford block I changed and put an 80 pound adjustable oil pump, but I still have the same trouble. Is it my oil, mains or what?
Robert L. Miner, Box 372, Winona Lake, Indiana.

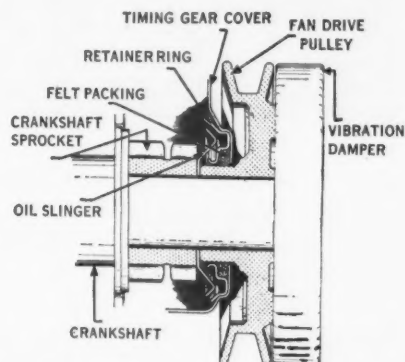
I WOULD suggest removing the engine and dismantling it. Then have the crankshaft miked, examined for wear and clogged passages. The passages in the block should be blown out with compressed air. If the camshaft bearings have not been replaced, I would suggest installing them at this time. If bearings are fit properly and your oil pressure registers normal, I can think of no other reason for bearing failures.

Oil Leaking Past the Timing Cover Oil Seal

I have worked on a 1940 Oldsmobile 6 that leaked oil by the timing cover oil seal. We replaced the oil seal four times, installed a new pulley, replaced the main bearing and it still leaks. The oil pressure is 30.

Can you tell me what else I can do in order to stop it from leaking oil? H. J. Poulin, Poulin's Garage, 13 Foley Street, Bristol, Connecticut.

THERE are several things to check on this job to correct the oil leak. First of all, it is most important that the crankcase breather system be operating properly. On this engine it is necessary to remove the rear valve cover in order to clean



the breather reservoir. Usually this reservoir becomes badly sludged, preventing the fumes from escaping which in turn builds up pressure in the crankcase, forcing the oil past the seals. Excessive crankshaft end play is another cause for seal failure. The end play should be no more than .008 in. and no less than .004 in. Also check the oil slinger in back of the timing case oil seal for wear and proper installation.

Cadillac Seems Allergic To Suspension Bridges

I am having trouble with a 1947 Cadillac 62.

The car runs fine at all speeds on any kind of road, but just as soon as you cross a suspension bridge one bank of cylinders cuts out and misses until you are past the suspension cables. The bank closest to the cables is the one that cuts out. You approach the bridge at 70 m.p.h. and as soon as you come to the cables the engine cuts out on the right bank and your speed drops to 50 m.p.h. with a full throttle. You get past the cables and you pick up all the speed you want. What can I do to correct this condition? Willie Reinman, 539 W. 179th Street, New York, N. Y.

LET me assure you that the bridge or bridge cables have nothing to do with your engine cutting out. I believe this is a condition where the valves hang up at a certain engine temperature and speed. Also a hot spot in the combustion chamber could cause this.

I would suggest running a good valve oil through the engine and installing colder spark plugs.

If these suggestions do not help, remove the head and examine it for hot spots and then do a valve job.

(Continued on page 66)

Clearing House Continued from page 65

1936 Ford Engine Has High Oil Consumption

I have a 1933 Ford with a 1936 in it. We overhauled it 5000 miles ago and it still uses one quart of oil per 100 miles. Also the compression is testing from 45 to 60 at cranking speeds.

We ground the valves, did not replace valve guides. This was a sleeve engine with cast iron sleeves. The pistons fit tight so we did not replace the sleeves. New rings and bearings, fuel pump, carburetor and distributor were installed.

The car has no power and gets about 11-12 miles per gallon of gasoline. Yet the engine sounds good. No oil leaks at all. Would new sleeves correct all this? Glen Gilmore, Pacific Highway Garage, Canyonville, Oregon.

SINCE your compression is only 45 to 60 pounds at cranking speed you can be sure the engine will have no power. The compression should read about 113 pounds at cranking speed.

You do not mention anything about blowby. If blowby is excessive it would indicate that the compression is getting by the rings.

I would suggest tearing this engine apart and rechecking the ring size, also the cylinder walls for excessive taper. In any case install a new set of rings and before installing them check each one to the cylinder bore, allowing .003 in. times bore diameter gap clearance. If sleeves measure okay I would not recommend installing new ones. You might recheck your valve clearance and make sure they are seating properly.

Studebaker Runs Hot And Burns Valves

I have a 1948 Studebaker Champion that has run hot since it was new. The first summer the trouble was blamed on the car being new and tight, less than 4000 miles on it. During the winter I had no trouble for a while.

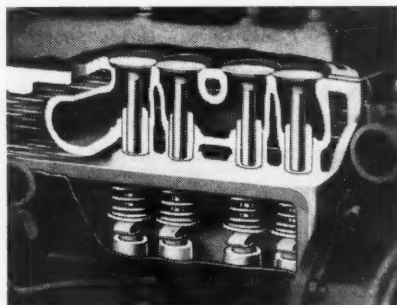
Then I had to have all the valves

replaced after it ran hot several times. It has been reverse flushed twice. The water pump has been tested and the radiator has been flow tested.

Thank you for any help you can give me. Rev. Oran Catterson, 5 S. Shaver Street, Mt. Union, Pennsylvania.

YOUR trouble may be caused by compression getting past the head gasket or possibly through a sand hole in the cylinder head combustion chamber. In either case, trouble such as you have mentioned would develop.

I would suggest having the following test made before tearing the engine apart. Remove one spark plug at a time and apply about 150 lbs. of air pressure. With this pressure applied, remove the radiator cap and look for air bubbles. This test should be made on all cylinders.



ders. If air bubbles are observed, remove head and examine closely for sand holes and defective gaskets.

What Causes High Oil Pressure Reading on Packard

I have a 1941 Packard that has an oil pressure of 80 pounds. I put a master oil gage on the block at the sending unit and the oil pressure is 40 pounds (normal pressure). I installed a new sending unit and oil gage but still I have 80 pounds pressure. I then removed the sending unit and oil gage and took another oil gage and sending unit from a car that I knew was alright. But still I find 80 pounds pressure. I checked three other

cars with the master gage and it checked okay. I don't see how it could be in the motor. Dick Fox, Diringier Packard Sales, 289 S. Washington Street, Tiffin, Ohio.

FIRST of all, make sure the engine and dash unit have a good ground. Check the voltage regulator for too high a setting. If car is equipped with a radio, remove the radio condenser under dash and test gage with it removed. If this condenser becomes shorted a high reading will result on the dash unit.

1947 Buick Chatters In Low and Reverse

I have a customer with a Buick 1947 Special which chatters and vibrates in reverse. Occasionally when attempting to go ahead in first it will stall the motor. I have not done any work on this job yet. The car has had a new clutch disk, pressure plate, throw-out bearing and pilot bearing, but there is no improvement. The motor mounts are all good. Could you please help me? Dennewitz Bros., 360 N. Michigan, Chatsworth, Illinois.

I WOULD suggest removing the clutch assembly to examine the facings for oil or grease. It is possible for the rear main bearing or transmission to leak oil causing the facings to become saturated. When the transmission is removed, carefully examine the rubber mounting for wear between the flywheel housing and cross member. In any case install a new clutch cover assembly and disk.

Nash Has Bad Quiver At Speeds Above 60 mph

I have a 1948 Nash Convertible which quivers considerably, particularly at very low speeds and also between 59 to 70.

This car is equipped with new tires and puncture seal tubes which have been balanced several different times on a static balancer.

We have also installed a stabilizer unit which is standard on all models except the convertible, but still no cure. The springs have been thoroughly checked, we even tried new ones in front with no appreciable results. The shocks have

been checked and are in good condition.

The car reacts in an odd manner, for the quivering affects the entire vehicle, which is particularly noticeable in this convertible model. The complete steering column shakes and even the interior of the auto. The vibration is very prominent on a road that is even slightly rough, for whenever you hit a crack in the roadbed, the car will quiver and rattle in a rather violent manner.

Any assistance you can offer in remedying this reaction will most certainly be appreciated. Russell S. Wunschel, sales manager, John F. Walsh Auto Company, 332-334 Douglas Avenue, Yankton, S. D.

YOUR problem is very interesting, especially after all the checking you have done.

My first suggestion would be to have these wheels balanced once more on another make wheel balancer. If they check okay, then, even though the shocks seem to be working, remove them and try another set as there is the possibility that they are being too severe. Adjust the steering worm and sector, removing all play, as the wheels may try to go into a shimmy. Also check the motor mountings.

Dodge Kingsway Has Had Three Clutches—Still Bad

I have a problem with my 1948 Dodge Kingsway automobile Club Coupe (not fluid drive).

Within the first 1000 miles the car developed a vibration at about 25 m.p.h. when pulling in high gear. The trouble was traced to the clutch pressure plate. In another 1000 miles the same condition developed. Again the pressure plate and clutch disc were changed. At this time the car had about 2100 miles on it. Again at about 3000 miles the same repairs were made.

After each change the noise would be gone for about the first 500 miles and from then on would start to develop. Originally the clutch pressure plate was of the light type but the second time the pressure plate was changed, a heavy duty type was installed.

The last time the car was in for repairs the flywheel was carefully checked, also the drive shaft was checked for alinement and balance. D. A. Howell, 226 Wyllie Street, Honolulu, T. H.

IT seems to me that this trouble is most likely caused by misalignment between the engine and the rear. In this case, check the motor mountings for looseness and tighten rear spring U bolts and at the same time, check the rear spring center bolts.

I have never heard of a pressure plate going bad as many times as yours. If the pressure plate is causing the trouble, vibration should be noticeable without the car moving, just by revving up the engine. If noise is only noticed while pulling then I am quite sure it is caused by misalignment. Also make sure this noise is not a vibration in the exhaust or muffler line.

Cadillac Fires on Four Cylinders at Idle

I have a problem with a 1942 Model 61 Cadillac. We corrected oil consumption by cleaning the carbon, grinding the valves and installing new rings and rod bearings. It runs good at high speed and pulls good but it won't idle but on four cylinders. Nos. 2, 3, 5 and 8 won't fire. The ignition and compression are okay. The carburetor is practically new. All four plug wires can be disconnected from the above cylinders and will have no effect on the running of the engine at idle.

Valve guides and stems are tight. The ignition timing is okay, set by synchroscope. The plug wires are new and the cylinders start firing at 650 rpm.

John Sporna, Sporna Radio Service, Ascatawpa, Alabama.

THIS, I believe, is caused by faulty diaphragms in the vacuum pump or a cracked inlet manifold. The first thing to check is the vacuum. I feel quite sure it will be low.

Before taking anything apart, disconnect the vacuum line at the manifold and plug it up. If the miss disappears either rebuild or install a new fuel and vacuum pump. If this check fails, then I would suggest installing a new inlet manifold.

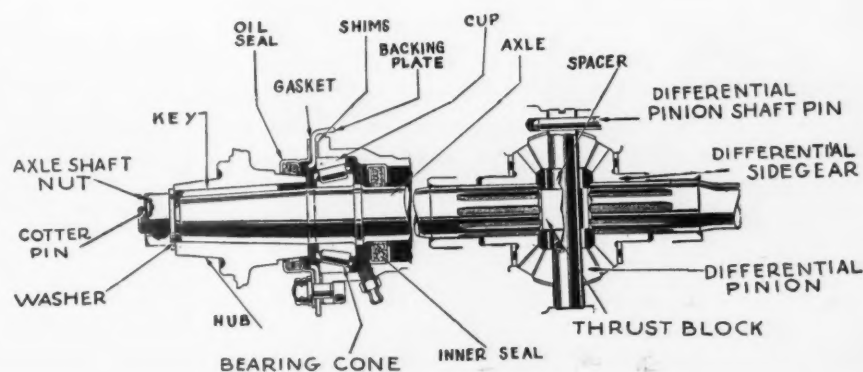
How to Stop Rear Wheel Grease Leaks

Can you give us some information on how to stop grease from leaking out of a rear wheel? We have changed both retainers three times but it still keeps leaking. Louis Maggiore, East Haven Green Garage, 175 Main Street, East Haven, Connecticut.

SINCE you do not mention the make of car I presume it is the type with inner and outer seals, such as Chrysler cars.

Whenever new seals are installed the axle shaft end play should be adjusted. Also the shaft and hub should be checked for wear at the points where the seals contact it. If leather seals are used, always soak them in engine oil for at least 30 minutes before installing them.

1947 Chrysler Rear Axle



NEWSCENE



Above. Bill Holland and his bride, the former Ruth Dannie Asmussen of Detroit, Mich., were married recently in Miami

British Show in N.Y.C.

British auto and motor cycle manufacturers will stage the first major postwar auto show in New York's Grand Central Palace, April 15 to 23, it was announced last month by Sir William Welsh, North American representative for the Society of Motor Manufacturers & Traders (Great Britain).

Below. Mr. C. H. Eyre sits in his 1902 Napier at the start of the Royal Automobile Club's Veteran Car Run in England. Mr. Eyre has owned the car since it was built



1950 Lincoln Announced

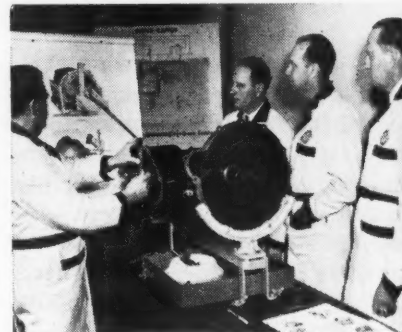
The 1950 Lincoln and Lincoln Cosmopolitan car, announced recently, offer a number of mechanical improvements and styling changes. Among the mechanical refinements made are a 50 per cent reduction in steering effort through changes in the steering mechanism; better economy claimed, through the use of a new three ring piston; increased hand brake efficiency; and a three-point wedge belt drive designed to eliminate slippage and insure uniform water pump performance. Minimum of creep is now claimed due to a modification which permits low idling speeds when the engine is started after standing, in the case of Hydramatic equipped cars. A new five-bladed fan is said to reduce noise level and operate at 16 per cent lower speed.

Many changes in exterior design are said to enhance the appearance of the 1950 models. Also a number of new upholstery fabrics are available, and the purchaser can choose his own fabric and "decorate" to his own taste.

There are seven colors of leather available, with four shades of Bedford cord.

Chevrolet School

The Chevrolet new product school will train approximately 10,000 mechanics of Chevrolet dealers' service departments in the proper methods of caring for the Powerglide transmission. At the session shown here, Jack Williamson (left) of Ver Hoven Woodward Chevrolet Co., Detroit, dismantles a new



Above. A session of the Chevrolet new product school

transmission, while Roy Oakes, the instructor; Jack Eby, Don Homer Chevrolet Co.; and Gordon Doman, look on.

Below. The 1950 Lincoln Cosmopolitan 6-passenger coupe, which features a new front grille, newly styled front fenders and improved Hydramatic.



DEALER ASSOCIATION Roundup...

Chicago Auto Show

Chicago's 42nd annual automobile show will take the industry's spotlight during its nine-day run from Feb. 18 to 26, inclusive at that city's International Amphitheater.

James F. McManus, Jr., chairman of the Chicago Automobile Trade Assn.'s show committee, announced that all of the 155,207 square feet of floor space have been taken, with passenger cars occupying the entire second floor and motor trucks, commercial trailers and bodies, tires and accessories displayed on the first.



The Committee in charge of the 42nd annual Chicago Automobile Show to be held Feb. 18 to 26. Seated (left to right) Frank H. Yarnall, president of the C.A.T.A.; James F. McManus, Jr., show chairman; and Ralph J. Scheu. Standing (left to right) James F. Goodwin; M. F. McCarty; Edward L. Cleary, show manager; and Ben T. Wright.

Rudy Anderson, Author

"The Story of the American Automobile," is the title of a new and interesting book on the progress and growth of the automobile industry. Its author, Rudolph E. Anderson, editor of the N.A.D.A. Magazine, spent twenty years of research in preparation. The book is illustrated with more than 125 historical pictures, which, like most of the contents of the book, have never been published in an automobile history.

Rudolph E. Anderson, Editor of N.A.D.A. Magazine, is shown here autographing his new book for Robert Deo, Managing Director of N.A.D.A.



Buffalo's First Post-War Show

Citizens of Buffalo will welcome the first automobile show in nine years, when the Buffalo Automotive Trades Assn. opens at the Masten Avenue Armory, Feb. 11. Miss Marjorie Baker, executive secretary of the dealer association, is manager.

N.A.D.A. Convention

As MOTOR AGE went to press, car dealers swarmed to Atlantic City for the 1950 N.A.D.A. Convention and Equipment Exhibit. The Exhibit formally opened Feb. 5 and closed with the convention, Feb. 8.

Subjects of vast timely importance to American business interests were discussed by Attorney General J. Howard McGrath and United States Senator Harry F. Byrd at the convention. Advance reservations indicated an attend-

ance of at least 12,000, it was announced today by Convention Manager Ray Chamberlain.

Among the more important features were four automobile dealer clinics conducted by experts in the retail automobile sales and service industry. The following subjects were discussed by panel members: "Employer-Employee Relations," with discussion led by Merlyn S. Pitzele, labor editor of *Business Week*; "Retail Sales Management," "Service," and "Used Cars."

The third annual equipment exhibition was held in conjunction with the convention. Included in this feature were approximately 250 exhibits, displaying products of the manufacturers of equipment, machinery, tools, supplies, systems, advertising and specialties used by automobile dealers. Several automobile manufacturers exhibited special procedures for handling and merchandising used cars.

FOLKS You Auto Know...



Robert E. Rudd

Robert E. Rudd has been appointed assistant general sales manager of the Buick Motor Division. Rudd was previously director of merchandising for the division.

Huntington Eldridge is now directing the distributor and national account sales activities of factory field men of the Alemite Division of Stewart-Warner Corporation. Since 1946 Eldridge has headed national accounts sales.

W. G. "Bill" Power has been named advertising manager of the Chevrolet Division of General Motors. He succeeds **Charles J. French**, who has been appointed national public relations director for the division.

A. H. Belfie has been appointed assistant general sales manager in Buick's eastern region.



A. C. Pontius

A. C. Pontius has been advanced to the position of assistant manager of the J. H. Williams & Company's Automotive Tools Division.

Wylie Axford is rejoining the John Bean Division as automotive sales manager. Axford originally joined the John Bean staff in 1936 as Michigan-Ohio field representative.

C. J. Schuepbach has been made president of the Motor and Equipment Manufacturers Association. **G. W. Sherin** was made vice president, **C. O. Kleinsmith**, secretary, and **C. P. Brewster**, treasurer.

Hugh J. Ferry has been elected president of the Packard Motor Car Company. Ferry takes his new office as successor to **George T. Christopher**.

Sanford M. Wagner has been elected vice president in charge of



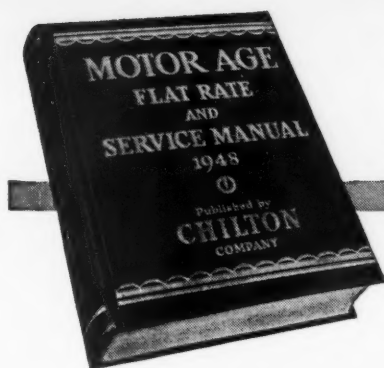
Sanford M. Wagner

sales of the Ethyl Corporation. He has been with Ethyl for 24 years, and will make his headquarters in the New York office.

H. L. Nehrbass has joined the John H. Sampson Company as vice president and marketing counselor. Mr. Nehrbass for many years was vice president in charge of sales and advertising for the Simoniz Company.

W. O. Merritt has been named sales promotion manager of the Clayton Manufacturing Company. Merritt's principal task will be to strengthen the advertising, training and promotion activities of the company.

Tom C. Campbell, Editor of *The Iron Age*, and **Frank P. Tighe**, Editor of *Motor Age*, have been elected to the board of directors of the Chilton Company, Inc., Philadelphia, Pa.



MOTOR AGE FLAT RATE AND SERVICE MANUAL DEPARTMENT

OPEN THE DOOR for profits

by Wm. H. Lutton, Assistant Editor,
Chilton's Motor Age Flat Rate and
Service Manual

Some motorists drive cars which are drab and dirty inside because no one has ever tried to sell them complete interior cleaning services at flat rate prices, as shown in this article

NOTHING detracts more from a beautiful body polish and wax job than opening the door of the car to find a dull, dirty interior, with spotted upholstery.

Yet here is an open door to a profitable service, with the opportunity for the sale of many interior parts and accessories. This service will meet with enthusiastic appreciation from your customers, especially the lady drivers.

This interior cleaning service can be rendered on a Flat Rate basis as an addition to a body polish and wax job, or as a separate service of its own. Charge the customer \$7.50 labor. This is for cars without seat covers.

Clean the entire upholstery of the car, including side panels and header lining, with a good dry cleaner and remove all spots and stains. (Complete instructions on the removing of spots from every cause is given in detail in the *MOTOR AGE Body and Frame Service Manual*.) Then brush the upholstery with a scrub brush, to restore the original finish to the nap of the fabric. Vacuum clean the rear floor rug and clean and paint the front mat. To complete this interior clean-up, polish and wax instrument panel and all other metal garnish and finish molding panels, strips and overlays.

You should charge the above mentioned price

for cars with seat covers which are made of the plastic materials, as they can be cleaned readily while on the car with a cloth and pure warm water. An added charge should be made, however, where seat covers are made of woven cloth material, to remove and reinstall covers so that the owner can have them cleaned if he so desires.

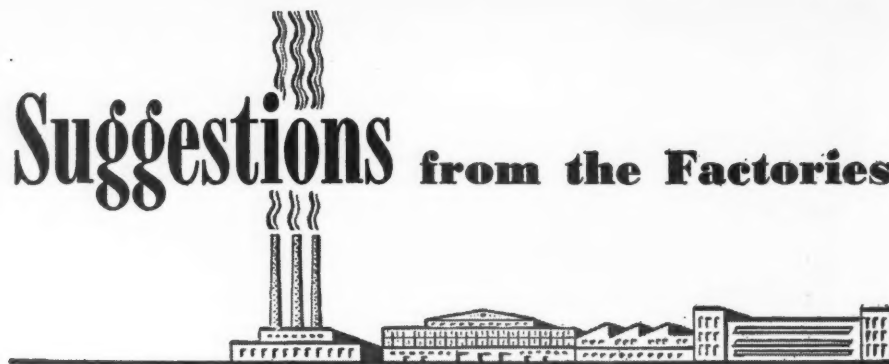
As to the opportunities for interior sales, they are many and varied. First is a sale of seat covers for the car that has none, or to replace the old worn ones. Sets in semi- or full-fitted styles can be had in various materials, including the plastic type fabrics from prices ranging from \$20.00 to \$50.00 and even higher.

Second, replace the front floor mat if it is worn or torn. These can be had in a semi-universal type or a carpet backed-type which is completely shaped and cut out to fit.

You can finish by making an accurate systematic check for any needed replacement of assist straps, bulbs in instrument panel, dome, rear reading, or step-up lights, and handles, escutcheons, buttons, or any other interior door part, sun visors, rear view mirrors, etc.

Whenever necessary the sale and installation of any of these added items must be added to the basic interior clean-up Flat Rate price of \$7.50.

Service Suggestions from the Factories



Two Slots on Some 1949

Cadillac Rear Main Bearings

On some 1949 Cadillac engines, the upper half of the rear main bearing surface has two cutouts instead of the usual one for the tang of the bearing.

One of these cutouts is at the tang and one is at the opposite side. This condition was brought about when the stock was set up for machining. This will not affect the engine in any way at all.

Direction Signal Loom

Cover Rattle on Pontiacs

A creaking noise that has developed in some cars in the vicinity of steering column to instrument panel bracket has been found to have been caused by directional signal loom cover rubbing on the lower finish plate or on the steering gear mast jacket.

Besides adding necessary insulation at the points of contact, it is imperative that the loom cover be assembled tight against the mast jacket.

It may be necessary to slot the two upper holes that hold the cover to the direction signal control housing to permit moving the upper end sufficiently to contact the jacket.

Don't Over-Tighten Stop

Light Switch Replacement

Do not over-tighten the stop light switch in the brass junction block when replacing. Doing so may cause the hard steel threads of the replacement switch to damage or strip the softer brass threads of the junction

block. The switch should be drawn finger tight, then tightened about $1\frac{1}{2}$ turns more.

When a leak cannot be stopped by tightening the stop light switch to above tension, then the junction block, the stop light switch or possibly both units should be replaced.

Repairing Rear Door Lock Remote Control

Some reports from the field have indicated cases on Cadillac four-door sedans where the rear door lock remote control would not operate the rear door lock. Usually this condition existed when the

was the cause of the remote control becoming inoperative.

If you meet with this condition you can check it and shorten the control rod if necessary as follows:

1. Remove rear door lock remote control rod.
2. Cut out a $7/32$ in. section from the approximate center of the rod.
3. Butt the 2 ends of sections together and weld.
4. Reinstall the remote control rod and recheck its operation of door lock assembly.
5. Reinstall the door trim pad and hardware.

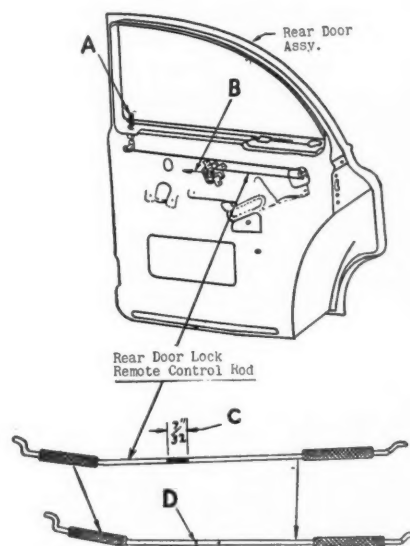
Timing Studebaker With Light Requires Full Retard

On checking 8G, 16A and former models, it has been found that at idle speeds the vacuum spark advance modifier sometimes assumes a slightly advanced position of from 1 deg. to 4 deg.

Ignition timing set with a neon or a stroboscopic light under this condition, will be thus correspondingly late at full throttle since the manifold suction is then sufficiently low to insure full retard.

So it is important therefore, that the spark advance modifier be in its full retard position in order to insure accuracy of the setting. To obtain full retard in such cases, disconnect the spark advance modifier suction pipe at the carburetor and temporarily plug the fitting hole in the throttle body before reading and setting the timing with the neon light.

Finally, reconnect the modifier and check for free operation and response to the throttle.



door locks were in the free wheeling adjustment.

Now a production change has been made whereby the remote control rod has been reduced $7/32$ in. in length. The shortening of the rod length has thus overcome the production variation which

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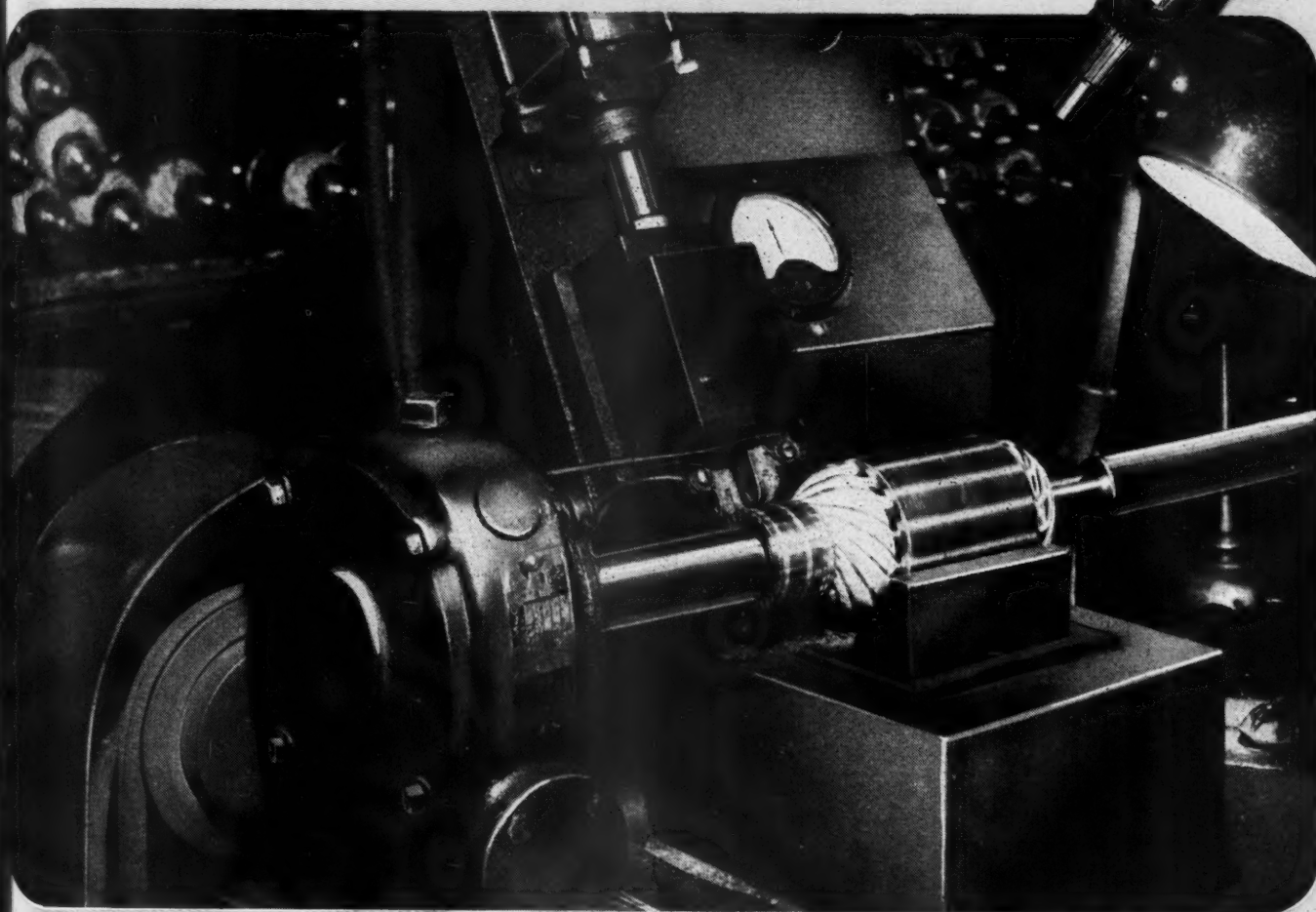
New Car Registrations by Makes by States*

STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	Crosley	De Sota	Dodge	Ford	Frazer	Hudson	Kaiser	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others	Total
Alabama.....Nov.	296	56	1359	117	13	100	398	1208	10	86	44	48	377	106	250	74	617	280	206	51	1	5,097
11 Mos.	3107	655	13428	1164	128	776	2800	10890	170	1203	553	503	2542	1254	2314	767	5903	2894	2046	299	41	53,237
Arizona.....Nov.	82	30	638	62	6	29	116	252	.....	47	4	11	53	66	75	21	197	81	112	16	1	1,599
11 Mos.	1302	362	4220	439	80	382	917	3589	45	760	133	143	696	681	826	298	1736	1102	1357	145	31	19,224
Arkansas.....Nov.	168	16	645	69	1	68	213	522	6	42	18	15	109	67	127	38	356	157	96	28	1	2,762
11 Mos.	2064	371	7817	781	46	546	1740	6427	207	1008	638	225	1080	862	1440	571	3955	1845	1226	383	120	33,332
California.....Nov.	2364	763	6747	850	58	812	1740	4689	38	693	158	232	1167	856	1972	497	2943	2589	1952	121	187	31,406
11 Mos.	27183	7902	73950	9680	761	9782	17740	56024	719	10224	2474	2875	13764	9141	20680	5757	33499	28907	22925	1572	1499	355,030
Colorado.....Nov.	324	70	793	131	8	77	184	780	4	203	35	38	227	163	211	104	467	228	141	20	2	4,208
11 Mos.	3095	622	7545	1382	93	703	1991	6313	119	2880	354	407	1836	1383	1847	919	4184	2173	1272	225	25	39,328
Connecticut.....Nov.	407	141	1134	195	12	150	351	932	2	119	50	38	203	161	390	110	707	391	286	26	19	5,782
11 Mos.	5873	1530	12011	1806	139	1422	3731	8150	82	1579	591	488	2047	1838	4157	1407	6525	4874	2770	399	242	61,062
Delaware.....Nov.	79	21	329	26	1	13	77	149	1	14	10	9	42	29	51	19	95	86	82	2	1	1,146
11 Mos.	972	224	2845	266	32	204	841	2452	35	244	155	130	508	262	883	210	1294	885	892	69	21	13,424
Dist. of Col.....Nov.	130	33	501	57	.....	34	113	351	.....	31	6	20	97	57	110	61	293	140	85	4	11	2,134
11 Mos.	2116	614	5698	742	44	509	1731	3883	50	833	159	264	1034	658	1893	675	3454	1859	988	84	121	27,419
Florida.....Nov.	646	196	2064	281	67	210	905	1810	8	174	67	126	596	259	506	194	1247	574	402	123	29	10,484
11 Mos.	5139	1686	14948	1973	454	1357	4427	13438	240	2321	830	1237	4143	1807	3587	1714	8174	3906	2784	925	228	75,310
Georgia.....Nov.	385	83	1651	131	13	109	497	1200	3	77	16	58	379	112	331	82	746	353	233	29	3	6,419
11 Mos.	5344	1121	17424	1603	174	1179	4069	14875	285	1848	797	836	3751	1448	3489	1228	7494	4844	2856	445	89	74,991
Idaho.....Nov.	149	43	517	55	1	44	171	415	2	48	11	20	103	96	103	51	217	172	186	23	14	2,441
11 Mos.	1649	308	4189	532	13	438	1125	3132	156	820	328	219	829	879	1020	393	1889	1332	1438	220	83	20,870
Illinois.....Nov.	1556	385	5366	685	29	608	1567	3442	35	606	198	168	1074	794	1373	437	2966	1507	964	68	12	23,840
11 Mos.	25178	5975	61385	8598	639	7120	18049	47007	1547	11283	4428	2677	11767	9717	16505	7443	35545	18889	11176	1409	1632	307,949
Indiana.....Nov.	834	165	2735	328	18	310	766	2167	15	332	106	94	450	461	781	285	1587	880	1051	42	6	13,413
11 Mos.	9816	1903	30138	3356	368	2710	7123	21267	550	4912	2090	925	4125	4413	7134	2931	14418	8411	8983	735	178	136,486
Iowa.....Nov.	508	85	2005	201	7	132	572	1424	7	154	95	40	301	213	380	116	979	483	305	21	2	8,030
11 Mos.	6267	947	21467	2507	188	1401	5503	18447	497	2709	1731	518	3906	2682	4226	1157	10111	5102	3273	321	253	93,813
Kansas.....Nov.	428	88	1441	181	19	109	331	1107	19	145	43	49	292	174	335	135	707	415	253	20	5	6,296
11 Mos.	4925	849	15839	1981	274	1077	3564	12072	548	2468	1016	631	3003	2206	3378	1555	7002	4091	2478	245	132	69,234
Kentucky.....Nov.	302	68	1406	158	5	101	349	1058	6	106	36	22	167	145	332	95	734	388	212	25	.....	5,714
11 Mos.	3951	641	13943	1517	128	886	3005	10718	176	1498	595	365	1725	1413	2935	1087	6565	3253	2030	506	134	57,070
Louisiana.....Nov.	378	97	1224	109	8	74	370	1061	2	69	39	50	279	103	290	89	522	356	231	23	8	5,382
11 Mos.	4151	873	13907	1250	174	796	3057	12079	208	1880	1019	543	2713	1250	2761	988	5817	3578	2571	463	84	60,142
Maine.....Nov.	141	38	509	66	3	51	142	296	8	33	18	8	80	61	115	34	298	121	97	16	1	2,136
11 Mos.	1686	357	4571	514	64	461	1328	2978	102	713	413	144	705	640	1340	438	2405	1638	790	224	52	21,633
Maryland.....Nov.	407	70	1424	159	9	135	377	1131	7	98	44	47	193	172	378	118	773	347	266	33	10	6,196
11 Mos.	4735	863	15574	1699	123	1407	3422	10259	171	1979	804	480	1976	1704	3967	1485	7776	3754	2574	384	113	65,249
Massachusetts.....Nov.	702	168	2071	347	15	305	699	1479	7	188	60	65	356	333	770	134	1416	762	448	45	468	10,342
11 Mos.	11244	2255	22440	3568	301	3376	7910	17280	210	2710	1196	921	4431	3977	10204	2433	14625	9826	4852	670	458	125,364
Michigan.....Nov.	1470	282	5077	445	19	488	1055	4601	38	341	100	112	928	822	1334	259	2541	1467	634	38	16	21,857
11 Mos.	24713	5223	70500	6205	377	5949	14014	58495	974	6507	3267	1621	10553	6869	17842	4836	28199	22772	17009	830	392	297,047
Minnesota.....Nov.	370	73	1397	212	5	141	418	913	11	132	100	25	246	248	350	149	809	421	299	9	5	6,333
11 Mos.	6409	1112	21081	3026	139	1740	5058	15781	451	3526	1898	581	3461	3254	4793	2262	11325	5739	4122	358	98	96,200
Mississippi.....Nov.	266	69	1065	126	8	84	322	924	8	69	15	16	173	78	159	45	487	266	161	34	2	4,367
11 Mos.	2686	501	8720	949	108	512	1881	7327	119	882	378	318	1440	930	1502	510	4162	2236	1900	291	75	38,532
Missouri.....Nov.	793	197	3357	346	15	245	829	2596	14	236	77	95	634	547	630	188	174	742	413	60	11	13,760
11 Mos.	7837	1653	30812	2903	241	2192	5851	21514	334	3065	1394	808	4512	3966	5639	2224	13829	6720	3857	665	210	120,028
Montana.....Nov.	182	43	606	70	1	52	142	430	6	78	18	24	113	87	160	58	265	158	120	34	.....	2,646
11 Mos.	1470	344	4776	602	26	421	1183	3323	130	963	308	223	987	762	1186	508	2004	1298	1129	212	24	21,788
Nebraska.....Nov.	360	67	1147	130	2	74	313	883	5	55	29	36	173	89	221	582	281	228	23	3	4	4,773
11 Mos.	3641	618	10559	1566	56	597	2462	9703	215	995	640	328	1842	938	1924	841	5742	2936	1781	221	81	47,686
Nevada.....Nov.	45	27	88	17	.....	11	30	56	1	7	2	13	41	16	30	12	46	41	30	6	1	822
11 Mos.	459	230	1134	215	.....	52	251	766	22	169	32	112	382	175	352	153	625	470	356	30	7	6,093
New Hampshire.....Nov.	91	14	384	41	3	15	88	245	3	20	18	9	41	46	83	14	154	90	53	10	10	1,432
11 Mos.	1117	187	2874	340	34	258	1016	2149	32	356	180	83	431	458	776	285	1618	1021	513	124	64	13,918
New Jersey.....Nov.	1393	385	3847	640	27	485	1217	2659	13	292	103	137	634	456	1049	301	1979	1613	826	128	83	18,067
11 Mos.	14125	3175	27909	4845	432	3527	9531	18568	284	4431	1355	1111	4972	3573	8889	3468	15318	13722	6148	1239	488	147,119
New Mexico.....Nov.	182	21	353	72	6	25	104	275	2	33	8	17	108	44	64	41	161	91	78	17	6	1,708
11 Mos.	1496	228	3195	501	72	220	795	2674	83	536	197	208	945	551	696	370	1487	867	718	117	33	15,899
New York.....Nov.	2495	717	6363	1190	26	1221	2640	4265	22	427	241	208	1045	982	2307	661	3899	2898	1347	188	171	33,311
11 Mos.	36134	9443	70408	11763	725	11334	27569	47328	1036	9850	5097	2791	12164	11224	26829	10023	40646	32112	15050	2469	1717	385,710
North Carolina.....Nov.	618	84	2141	185	18	186	688	1842	5	125	68	67	550									

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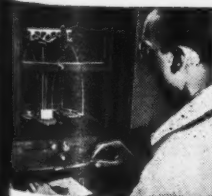
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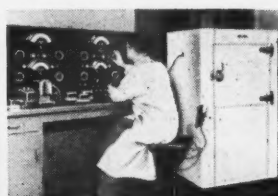
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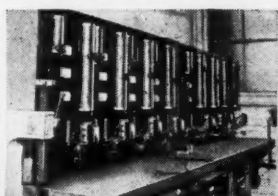
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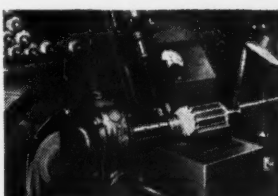
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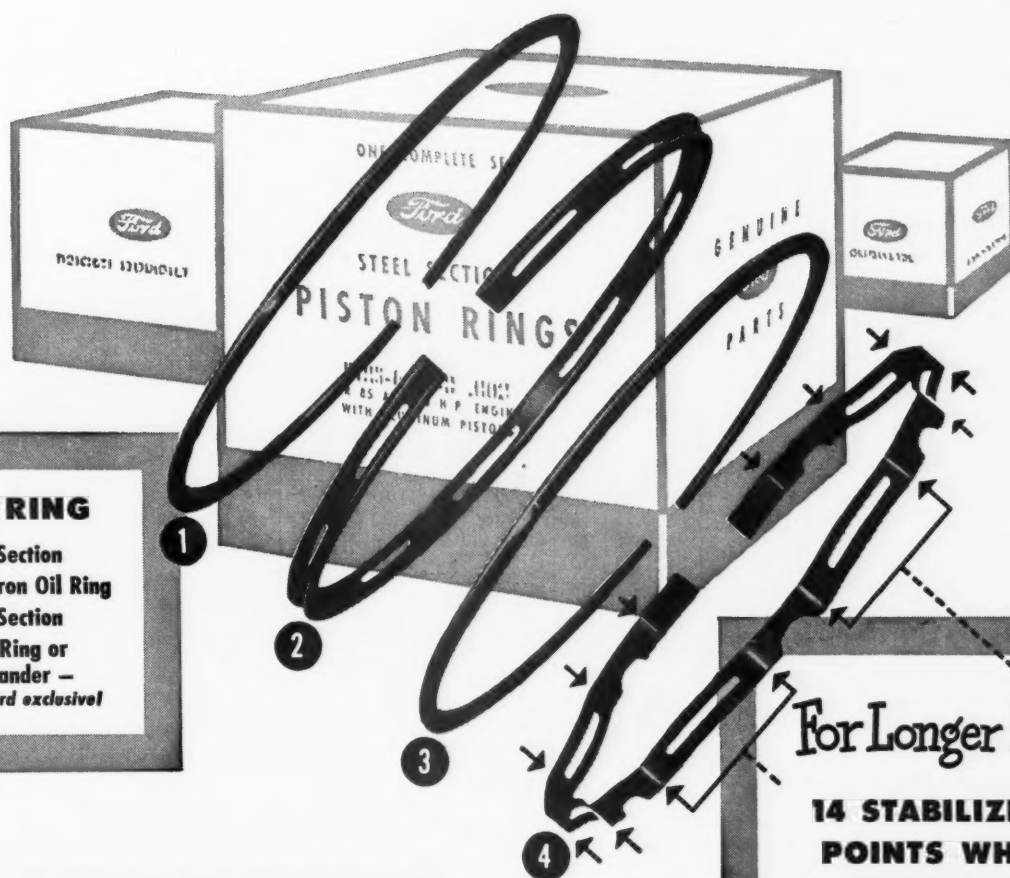
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Current Engine and Tune-up Specifications

ENGINE			TUNE-UP DATA										STEERING																				
MAKE AND MODEL	Wheelbase (In.)	No. of Cylinders, Bore and Stroke	Taxable Hq.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Compression Ratio (with Bare Engine)	Compression Pressure at Cranking Speed (Lbs.)	Spark Plug Make and Type	Rings		VALVES				IGNITION			Caster (Deg.)	Camber (Deg.)	Toe-In (In.)	King Pin Inclination (Deg.)												
									No. and Width	No. and Width	Seat Angle	Inlet	Exhaust	Stem Diameter (In.)	Inlet	Exhaust	Operating Tappet Clearance					Inlet Valve Timing	Deg. Inlet Opens Before Timing	Timing Marks	Breaker Point Gap	Cam Angle (Deg.)	Spark Plug Gap	Timing Marks Located	Timing	Roots Removed From Crankcase Capacity, Refill (Qts.)	Cooling System Capacity (Qts.)		
Buick Special 40	121 1/2	8-3 1/4x4 1/2	30.6	249.1	115-3600	6.6	114	AC-48	2-3/8	2-1/8	45	.015H	.015H	.372	.015	13BT	None	None	None	None	.015	•	.025	4BT	Fly	A	5 1/2	13	13	1/8 to 3/8	4 1/4	4 1/4	4 1/4
Buick Wildcat Super, 60	121 1/2	8-3 1/4x4 1/2	32.5	263.3	124-3600	6.9	118	AC-48	2-3/8	2-1/8	45	.015H	.015H	.372	.015	13BT	None	None	None	None	.015	•	.025	4BT	Fly	A	5 1/2	13	13	1/8 to 3/8	4 1/4	4 1/4	4 1/4
Buick Wildcat Roadmaster, 70	126.3	8-3 1/4x4 1/2	37.8	320.2	152-3600	7.2	120	AC-48	2-3/8	2-1/8	45	.015H	.015H	.372	.015	14BT	None	None	None	None	.015	•	.025	6BT	Fly	A	7	17 1/4	17 1/4	3/8 to 1/2	4 1/4	4 1/4	4 1/4
Cadillac 61, 62, 60	146 1/2	8-3 1/4x4 1/2	46.5	331.0	160-3600	7.5	120	AC-46-5	2-3/8	2-1/8	44	.015H	.015H	.343	.001	24BT	None	None	None	None	.015	31 ±	.035	5BT	VD	A	5	18	18	1/8 to 3/8	5 3/4	5 3/4	5 3/4
Cadillac 61, 62, 60	146 1/2	8-3 1/4x4 1/2	46.5	331.0	160-3600	7.5	120	AC-46-5	2-3/8	2-1/8	44	.015H	.015H	.343	.001	24BT	None	None	None	None	.015	31 ±	.035	5BT	VD	A	5	18	18	1/8 to 3/8	5 3/4	5 3/4	5 3/4
Chevrolet Six, HJ-HK	115 1/2	6-3 1/4x3 1/2	29.4	216.5	92-3400	6.6	110	AC-46-5	2-3/8	2-1/8	30	.015H	.013H	.006H	1BT	Fly	Fly	Fly	Fly	.021	34	.035	5BT	Fly	A	5	15	15	3/8 ± 1/2	0 to 3/8	0 to 3/8	4 ± 30"	
Chrysler Six, C-48	125 1/2	6-3 1/4x4 1/2	28.3	250.6	116-3600	7.0	135	AL-AR-5	2-3/8	2-1/8	45	.015H	.010H	.014	12BT	VD	VD	VD	VD	.020	34 1/2	.035	TC	VD	A	5	17	17	1 to 3	0 to 1/8 (v)	0 to 1/8 (v)	4 3/4 to 6	
Chrysler Eight, C-49	131 1/2	8-3 1/4x4 1/2	33.8	323.5	135-3200	7.2	135	AL-AR-5	2-3/8	2-1/8	45	.015H	.010H	.011	12BT	VD	VD	VD	VD	.018	27	.035	TC	VD	A	6	21	21	1 to 3	0 to 1/8 (v)	0 to 1/8 (v)	6 1/4 to 7 1/2	
Chrysler Eight, C-50	146 1/2	8-3 1/4x4 1/2	33.8	323.5	135-3200	7.2	135	AL-AR-5	2-3/8	2-1/8	45	.015H	.010H	.011	12BT	VD	VD	VD	VD	.018	27	.035	TC	VD	A	6	21	21	1 to 3	0 to 1/8 (v)	0 to 1/8 (v)	6 1/4 to 7 1/2	
Crosley Four, CD-49	80	4-2 1/4x2 1/2	10.0	44.0	25.5-5400*	7.8		AL-AN7E	2-3/8	2-1/8	45	.015H	.006C	.009	5BT	.....	.....	.....	.....	.020	46	.025	8BT	Fly	B	2	4	7 1/2	2	2 1/2 to 3 1/2	6 1/2	6 1/2
De Soto Six, S-14	125 1/2	6-3 1/4x4 1/2	28.3	236.6	112-3600	7.0	135	AL-AR-5	2-3/8	2-1/8	45	.015H	.010H	.014C	12BT	VD	VD	VD	VD	.019	34 1/2	.035	TC	VD	A	5	17	17	1 to 3	0 to 1/8 (v)	0 to 1/8 (v)	4 3/4 to 6	
Dodge Six, D-33, D-34	(a)	6-3 1/4x4 1/2	25.3	230.2	103-3600	7.0	135	AL-AR-5	2-3/8	2-1/8	45	.015H	.010H	.014	8BT	VD	VD	VD	VD	.020	34 1/2	.035	TC	VD	A	5	15	15	1 to 1	0 to 1/8 (v)	0 to 1/8 (v)	4 3/4 to 6	
Ford Six, OHA	114	6-3 3/4x4 1/2	28.1	225.9	95-3300	6.8	110	CH-H10	2-093	2-186	45	.010C	.014C	.015	11BT	VD	VD	VD	VD	.025	36	.030	TC	VD	A	4	17.3	17.3	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/2	
Ford Eight, OBA	114	6-3 3/4x4 1/2	32.5	239.4	100-3600	6.8	100	CH-H10	2-093	2-186	45	.014	.018	.018	5BT	CP	CP	CP	CP	.015	27	.030	2BT	CP	A	4	22	22	1/2 to 1	1/8 to 1/8	1/8 to 1/8	5 1/	

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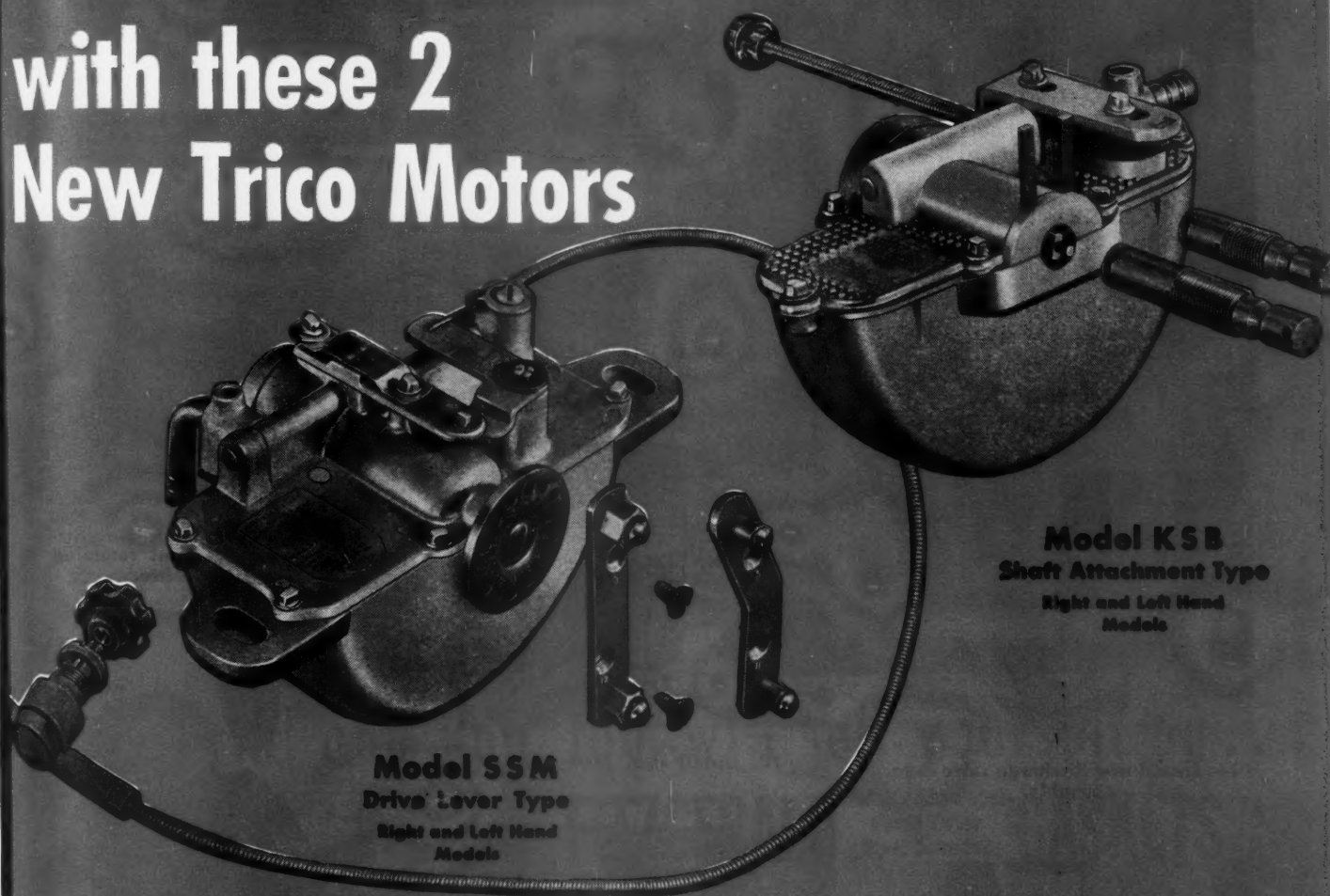
Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of January 20, 1950.
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK					CROSLEY					LINCOLN					PACKARD (Cont.)				
Special 40					Sedan, 2d.....	803	63	866	1363	Coupe, 6p.....	2350	177	2527	3959	DeL. Tr. Sed.....	2745	174	2919	3925
Bus. Coupe.....	1695	124	1819	3615	Convertible.....	803	63	866	1320	Spt. Sedan, 4d.....	2395	180	2575	4009	Conv. Vict. Cpe.....	3154	196	3350	4110
Sedanet.....	1745	127	1872	3655	Sta. Wagon.....	829	65	894	1403	Convertible.....	2910	206	3116	4224	DeL. Sedan, 7p.....	3724	226	3950	4600
Sedan, Del.....	1785	130	1915	3685	Hotshot Rdst.....	799	62	861	1175	Cosmopolitan					DeL. Limous.....	3867	233	4100	4620
Sedan, 4d.....	1795	130	1925	3715						Coupe.....	2975	210	3185	4194	Custom 8				
Tour. Sed., 4d.....	1825	132	1957		DE SOTO					Twn. Sedan.....	3025	213	3238	4274	Tour. Sed., 4d.....	*3522	218	*3750	4200
Sed., Del., 4d.....	1835	133	1968	3720	De Luxe					Spt. Sedan.....	3025	213	3238	4259	Convert. Vict.....	*4051	244	*4295	4435
Tour. Sed.,					Club Coupe.....	1671	105	1976	3450	Convertible, 6p.....	3700	248	3948	4419					
Del., 4d.....	1865	134	1999		Sedan, 4d.....	1681	105	1986	3525						PLYMOUTH				
Super 50					Carry-All.....	2075	116	2191	3600	MERCURY					DeLuxe P-19				
Sedanet.....	1913	146	2059	3645	Custom					Coupe, 6p.....	1845	134	1979	3321	Coupe, 3p.....	1295	76	1371	2672
Riviera.....	2005	152	2157		Club Coupe.....	2042	114	2156	3575	Spt. Sedan, 4d.....	1895	136	2031	3386	Sedan, 2d.....	1410	82	1492	2948
Tour. Sed., 4d.....	2006	151	2157	3745	Sedan, 4d, 6p.....	2059	115	2174	3640	Convertible, 6p.....	2255	155	2410	3591	Suburban	1740	100	1840	3116
Sedan, 4d.....	2075	155	2230		Convertible.....	2443	135	2578	3815	Sta. Wagon.....	2545	171	2716	3626	DeLuxe P-20				
Conv. Coupe.....	2325	169	2494		Sedan, 6p.....	2713	150	2863	4115					Club Coupe.....	1435	84	1519	3040	
Est. Wagon.....	2675	167	2842		Sta. Wagon.....	2932	161	3093	4400	NASH				Sedan, 4d.....	1465	86	1551	3068	
R'dmaster 70					Suburban.....	3013	166	3179		Statesman				Spec. DeL. P20					
Sedanet.....	2365	186	2551	4025						Bus. Cpe., 2d.....	1523	110	1633	2900	Club Coupe.....	1515	88	1603	3041
Tour. Sed., 4d.....	2465	191	2656	4135	DODGE					Super				Sedan, 4d.....	1540	89	1629	3072	
Sedan, 4d.....	2565	196	2761		Wayfarer, D33					Sedan, 2d.....	1598	115	1713	2930	Conv. Cb. Cpe.....	1875	107	1982	3295
Riviera.....	2675	202	2877		Coupe, 3p.....	1525	86	1611	3095	Club Cpe., 2d.....	1620	115	1735	2940	Sta. Wagon.....	2245	127	2372	3353
Conv. Coupe.....	2795	209	3004		Roadster, 3p.....	1635	92	1727	3190	Sedan, 4d.....	1623	115	1738	2965					
Est. Wagon.....	3200	230	3430		Sedan, 2d.....				3200	Custom					PONTIAC				
					Meadowb'k D34					Sedan, 2d.....	1748	124	1872		Chief, 8				
					Sedan.....	1750	98	1848	3395	Club Cpe., 2d.....	1770	124	1894		Bus. Coupe.....	1542	114	1656	3289
CADILLAC					Coronet D34					Sedan, 4d.....	1773	124	1897	2990	Sed. Coupe.....	1659	120	1779	3339
Series 61					Club Coupe.....	1812	102	1914	3340	Ambassador					Sedan, 2d.....	1659	120	1779	3364
Club Coupe, 2d.....	2615	173	2788	3880	Club Coupe.....	1825	102	1927	3410	Super					Sedan, 4d.....	1707	122	1829	3384
Tour. Sedan, 4d.....	2715	178	2893	3950	Twn. Sedan.....	1905	107	2012	3410	Sedan, 2d.....	1904	135	2039	3325	DeL. Sed. Cpe.....	1749	125	1874	3344
Series 62					Conv. Coupe.....	2206	123	2329	3590	Sedan, 2d.....	1925	135	2060	3335	DeL. Sed., 2d.....	1749	125	1874	3354
Club Coupe, 2d.....	2785	181	2966	3910	Sta. Wagon.....	2479	138	2617	4045	Sedan, 4d.....	1929	135	2064	3350	DeL. Sed., 4d.....	1797	127	1924	3389
Tour. Sedan, 4d.....	2865	185	3050	3980						Custom					DeL. Conv. Cpe.....	2065	141	2206	3534
Conv. Coupe, 2d.....	3290	207	3497	4230	FORD					Sedan, 2d.....	2054	144	2198		Streaml. 8				
Series 60					Six					Club Cpe., 2d.....	2075	144	2219		Sed. Cpe.....	1639	119	1758	3354
Tour. Sedan, 4d.....	3595	233	3828	4150	Bus. Coupe.....	1236	97	1333	2871	Sedan, 4d.....	2079	144	2223	3390	Sedan, 4d.....	1687	121	1808	3369
Series 75					Tudor.....	1323	102	1425	2945	OLDSMOBILE					DeL. Sed. Cpe.....	1729	124	1853	3359
Bus. Sedan, 9p.....	4365	285	4650		Fordor.....	1368	104	1472	2990	Series 76-8					DeL. Sed., 4d.....	1777	126	1903	3399
Tour. Sedan, 4d.....	4460	290	4750	4685	Custom 6					Club Coupe.....	1615			3260	Met. Sta. Wag.....	2200	148	2348	3594
Bus. Imp., 9p.....	4545	294	4839		Tudor.....	1405	106	1511	2948	Sedan, 2d.....	1640			3280	DeL. Met. St. Wg.....	2275	152	2427	3599
Sedan, 7p.....	4670	300	4970	4885	Club Coupe.....	1405	106	1511	2928	Sedan, 2d.....	1655			3290	Chief, 6				
Imperial, 7p.....	4860	310	5170	4720	Fordor.....	1450	109	1559	2993	Club Cpe., Del.....	1680			3280	Bus. Cpe.....	1477	110	1587	3209
					Eight					Sedan, 2d.....	1705			3285	Sed. Cpe.....	1594	116	1710	3249
CHEVROLET					Bus. Coupe.....	1318	102	1420	2911	Sedan, 4d.....	1710			3320	Sedan, 2d.....	1594	116	1710	3274
Styleline HJ					Tudor.....	1393	106	1499	2985	Sed., 2d, Del.....	1720			3295	Sedan, 4d.....	1642	119	1761	3299
Bus. Coupe.....	1250	89	1339	3025	Fordor.....	1438	108	1548	3030	Sed., 4d, Del.....	1775			3340	DeL. Sed. Cpe.....	1684	121	1805	3254
Sedan, 2d.....	1320	93	1413	3085	Custom 8					Hol. Coupe.....	1885				DeL. Sed., 2d.....	1684	121	1805	3279
Spt. Coupe.....	1325	93	1418	3050	Club Coupe.....	1485	110	1590	2988	Hol. Cpe., Del.....	1895			3385	DeL. Sed., 4d.....	1732	124	1856	3304
Sedan, 4d.....	1365	95	1460	3120	Fordor.....	1525	113	1638	3033	Conv. Coupe.....	2010			3585	DeL. Conv. Cpe.....	2000	138	2138	3439
FI'line HJ					Conv. Coupe.....	1820	129	1949	3274	Sta. Wgn., Del.....	2360			3615	Streaml. 6				
Sedan, 2d.....	1320	93	1413	3080	Sta. Wagon.....	2118	148	2264	3563	Series 85-8					Sedan, 4d.....	1574	115	1699	3269
Sedan, 4d.....	1365	95	1460	3115	FRAZER					Club Coupe.....	1765			3435	Sedan, 2d.....	1622	118	1740	3304
Styleline HK					Sedan.....	2264	131	2395	3455	Club Sedan.....	1790			3475	DeL. Sed. Cpe.....	1684	120	1784	3274
Sedan, 2d.....	1395	97	1492	3100	Manhattan.....	2446	149	2595	3514	Sedan, 2d.....	1805			3485	DeL. Sed., 4d.....	1712	123	1835	3309
Spt. Coupe.....	1410	98	1508	3090	HUDSON					Sedan, 4d.....	1840			3455	Met. Sta. Wag.....	2135	145	2280	3674
Sedan, 4d.....	1440	99	1539	3150	Pacemaker					Club Cpe., Del.....	1860			3515	DeL. Met. St. Wg.....	2210	149	2359	3474
Conv. Coupe.....	1740	117	1857	3380	Coupe, 3p.....	1675	132	1807		Sed., 2d, Del.....	1885			3485	STUDEBAKER				
Bel Air Coupe.....	1640	111	1751	3295	Brougham.....	1775	137	1912	3475	Hol. Coupe.....	1935			3500	Champ. Del.....				
Sta. Wag. Steel.....	1880	124	2004	3460	Coupe, 6p.....	1795	138	1933	3460	Hol. Cpe., Del.....	2135			3565	Coupe, 3p.....	1482	106	1588	2635
FI'line HK					Sedan, 4d.....	1795	138	1933	3510	Conv. Coupe.....	2160			3745	Sedan, 2d.....	1547	110	1657	2720
Sedan, 2d.....	1395	97	1492	3115	Super 6					Sta. Wgn., Del.....	2510			3780	Coupe, 5p.....	1572	111	1683	2705
Sedan, 4d.....	1440	99	1539	3145	Coupe, 3p.....	1915	138	2053	3460	Series 98-8					Sedan, 4d.....	1577	112	1689	2750
CHRYSLER					Brougham.....	2013	143	2156	3470	Club Sedan.....	2095			3685	Ch. Reg. Del.....				
Royal 6					Club Coupe.....	2058	145	2203	3480	Town Sedan.....	2135			3710	Coupe, 3p.....	1552	110	1662	2640
Club Coupe.....	2002	112	2114	3360	Sedan, 4d.....	2061	146	2207	3500	Sedan, 4d.....	2165			3765	Sedan, 2d.....	1617	114	1731	2725
Sedan, 4d, 6p.....	2021	113	2134	3655	Conv. Brghm.....	2623	176	2799		Club Sed., Del.....	2185			3705	Coupe, 5p.....	1642	115	1757	2715
Sedan, 4d, 9p.....	2705	150	2855		Commodore 6					Twn. Sed., Del.....	2225			3755	Sedan, 4d.....	1647	115	1762	2785
Sta. Wagon, 9p.....	2998	165	3163		Club Coupe.....	2205	154	2359	3550	Hol. Coupe.....	2245			3775	Convertible.....	1955	131	2086	2900
Windor 6					Sedan, 4d.....	2228	155	2383	3540	Sed., 4d, Del.....	2255				Commdr.				
Club Coupe.....	2186	122	2308	3670	Conv. Brghm.....	2768	184	2952		Hol. Cpe., Del.....	2490				Coupe, 3p.....	1792	127	1919	
Sedan, 4d, 6p.....	2206	123	2329	3765	Super 8					Sed., 4d, Del.....	2490				Sedan, 2d.....	1857	131	1988	3215
Conv. Coupe.....	2598	143	2741	3905	Brougham.....	2093	152	2245		Conv. Cpe., Del.....	2615				Coupe, 5p.....	1882	132	2014	3215
Sedan, 4d, 8p.....	2890	160	3050		Club Coupe.....	2138	154	2292	3495					Sedan, 4d.....	1887	132	2019	3265	
Limousine.....	3010	166	3176		Sedan, 4d.....	2141	155	2296	3525	PACKARD					Com. Reg. Del.....				
Saratoga 8					Commodore 8					Eight					Coupe, 3p.....	1907	134	2041	
Club Coupe.....	2478	138	2616	4110	Sedan, 4d.....	2285	163	2448</											

Match 500 Motors

with these 2
New Trico Motors



Model SSM
Drive Lever Type
Right and Left Hand
Models

Model KSB
Shaft Attachment Type
Right and Left Hand
Models

**...they fit millions of cars
dating back to 1932**

To enable dealers everywhere to service the tens of millions of Trico-equipped cars now approaching "old age," Trico has developed these two new Universal-Interchangeable Windshield Wiper Motors.

With them...plus a kit of assorted shafts and drive levers...you can match over 500 Motor models dating back to 1932, all originally built by Trico.

Trico Wholesalers carry complete stocks of replacement Linkages, Blades and Arms and will also continue to supply replacement Motors in original equipment styles. Ask your Wholesaler to show you the Universal-Interchangeable initial stock assortment.

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.



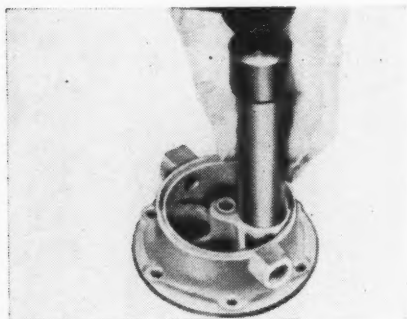
WINDSHIELD WIPERS

Copyright 1949, Trico Products Corporation, Buffalo, N. Y.

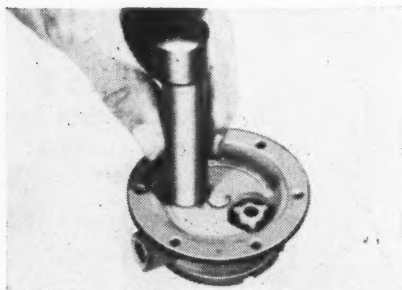
Carter Fuel Pump . . Continued from Page 54

fitting at the carburetor. The hose should not exceed 6 in. in length. The specified pressure on M594S

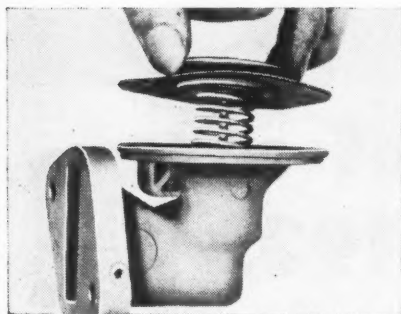
should be $3\frac{1}{2}$ to 5; M593S should be $2\frac{1}{2}$ to $3\frac{1}{2}$; M639S should be $3\frac{1}{2}$ to 5 lb. per sq. in. at 500 RPM.



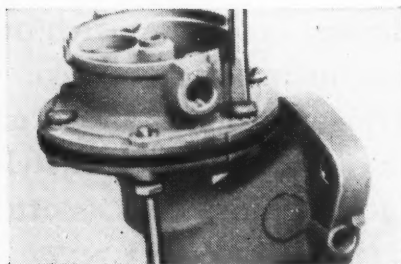
13. Install new intake valve cage assembly using Carter tool number T109-191.



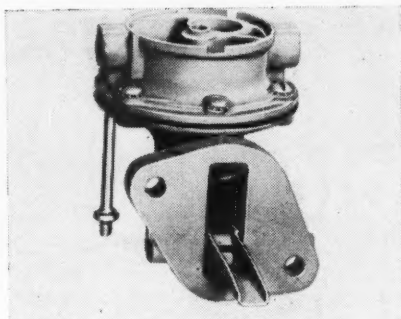
14. Install new discharge valve cage assembly.



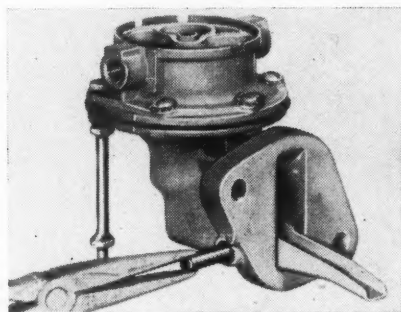
15. Install diaphragm assembly with flats toward ports.



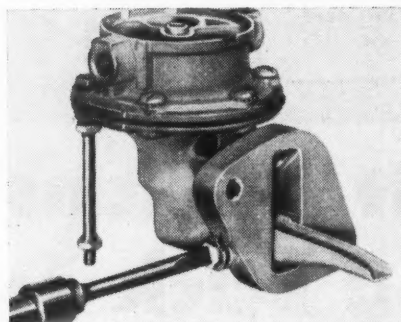
16. Install pump valve housing. Align marks, then start all screws but do not tighten.



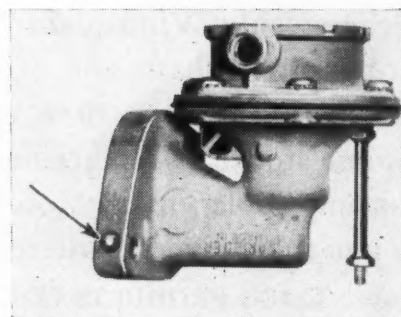
17. Install cam lever and spring retainer.



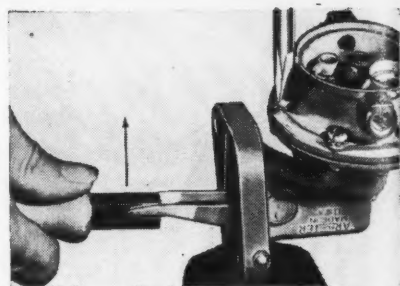
18. Install cam lever pin.



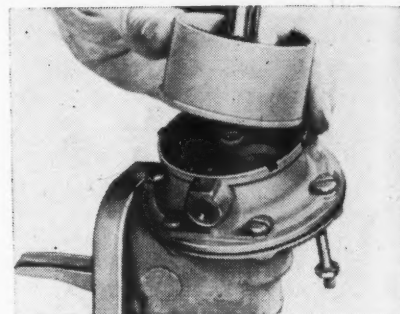
19. Install cam lever pin plug and washer.



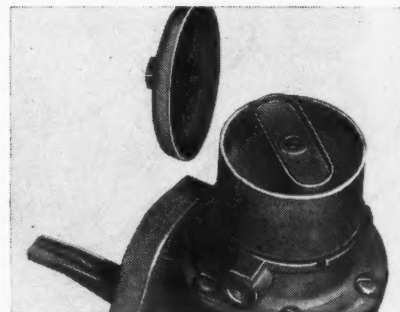
20. Install new rivet plug. Use tool (T109-43).



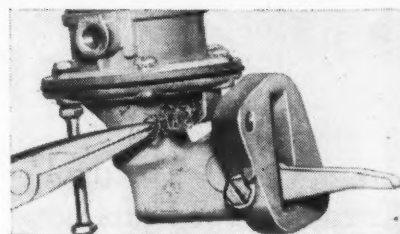
21. Flex diaphragm assembly to full downward position and hold in place while tightening valve housing attaching screws.



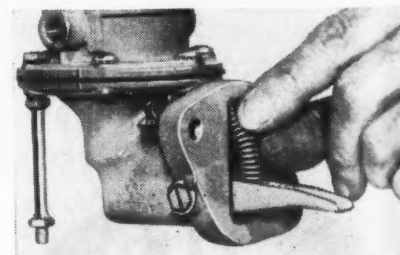
22. Install outlet airdome diaphragm, bowl and bowl retaining screw and washer.



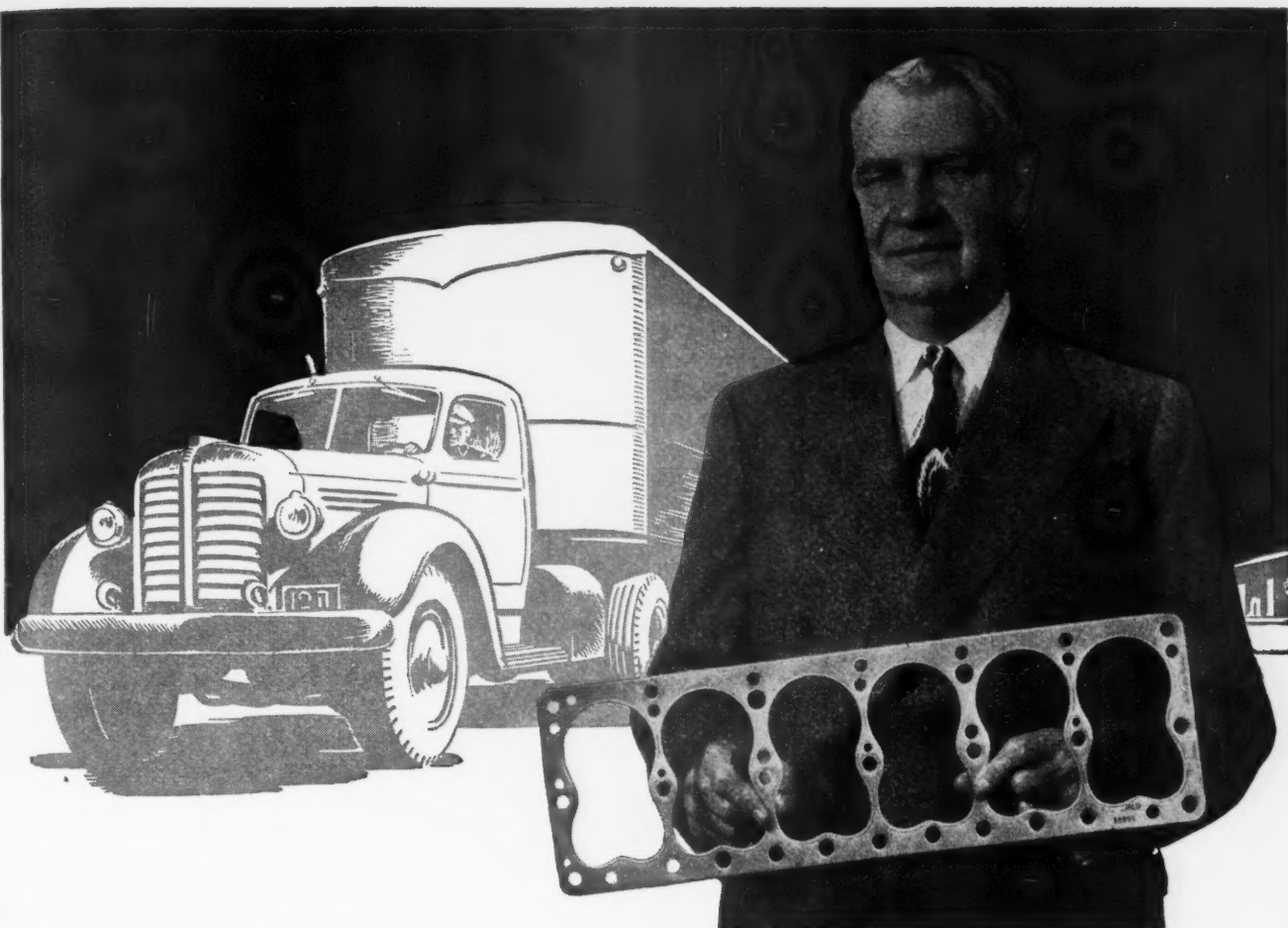
23. Insert cap screw through gasket and bowl cover and install felt packing on screw. Then install strainer, bowl cover and ring gasket.



24. Install vent packing and retainer.



25. Install cam lever return spring.



"One trial and you, too, will sell yourself on..

FITZGERALD Metallic Aluminum-Fused-Oxide Steel Asbestos GASKETS*

SAYS P. J. FITZGERALD

The maintenance supervisor for a large fleet of vehicles recently told me how he became completely sold on Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets*. His case is typical of many.

No gaskets he had previously tried would stand the terrific heat and pressures developed by his high compression engines. Road failures were costing him real money. Then he tried Fitzgeralds. *Not a single one has failed.* Needless to say, he now uses Fitzgeralds exclusively.

Specially designed for high compression engines, Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets combine the strength of steel, the corrosion resistance of aluminum oxide and top-grade asbestos filler. Their sealing action is positive and permanent. They are backed by nearly half a century of gasket craftsmanship.

*Service Mark Registration Pending

President

THE FITZGERALD MANUFACTURING CO.
Torrington, Connecticut

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.002"-.003" THICK
FUSED ALUMINUM OXIDE

ELECTRICALLY ANNEALED STEEL

ASBESTOS

.002"-.003" THICK
FUSED ALUMINUM OXIDE

A—A

GREASE RETAINERS — CORK GASKETS — FITZ-RITE
 TREATED FIBER GASKETS FOR OIL, GASOLINE
 AND WATER CONNECTIONS
 COMPLETE SETS FOR MOTOR REBUILDERS

FITZGERALD
gaskets
 SINCE 1906

pletely. Do not remove the accumulator plugs. Install and tighten all drain plugs and install the bell housing cover. Put three quarts of specified oil in the transmission. With the engine idling and the transmission in the parking position, complete the refilling to bring oil level to $1\frac{3}{4}$ inches below the full mark on the gage rod. When the transmission is warmed up, the oil level should be then at the full mark on gage rod, as specified.

The Series 40-50 transmission requires approximately $8\frac{1}{2}$ quarts total and the Series 70 transmission requires approximately 10 quarts total.

Oil pressure in the hydraulic control system can be tested by using the special gage shown in Figs. 1 and 2. Plugged openings at four different places on the transmission are provided for connecting the gage to test pressure of the front pump, rear oil pump, high accumulator and low accumulator.

With the transmission warmed up to operating temperature and oil level correct, remove the floor pan over transmission. Jack the rear wheels off the floor and place them on stands so that the rear wheels are free to spin. To test the front oil pump pressure, remove the pipe plug on the left side of the reaction shaft flange and connect the gage. To test the rear oil pump pressure, remove the pipe plug in lower flange on the front end of the rear bearing retainer and connect the gage as shown in Fig. 1. Pressure in high and low accumulators can be tested by removing the plug in the top of the accumulator body and connecting the gage as shown in Figs. 1 and 2.

Run the engine at 500 rpm and test the pump and accumulator pressure in low, drive and reverse. Test the front oil pump in all ranges and the rear oil pump in all but reverse. Test the high accumulator only in drive and test the low accumulator only in low. Repeat the tests at 1000 rpm and 1800 rpm in low and drive only.

Make a record of the pressure in each test. A diagnosis chart for making these recordings can be ob-

tained from local dealers. The pressures that should be obtained on each test are printed on the guide and space is provided for inserting the actual pressure obtained. The guide also provides for oil leak, checks, and the rear side gives a summary of the usual complaints and suggested corrections.

Low or erratic oil pump pressure indicates an air leak into the pump suction line, faulty pressure regulator valve operation, or excessive clearance in the pump. Low rear pump pressure also may be caused by a leak in the valve and servo body passages which connect the rear pump with the pressure regulator valve. If the pressure of one pump is low but the pressure of



the other pump is okay it would eliminate the possibility of a faulty regulator valve or air leaking into the suction line as both pumps use a common suction line, and the same valve regulates pressure of both pumps.

Very low accumulator pressure may be caused by external or internal leakage past the accumulator body gasket. A variation of more than 10 psi between the front pump and an accumulator indicates an excessive leak between the accumulator and the clutch (if high accumulator pressure is low) or the low servo (if low accumulator pressure is low), or else the metering orifice in accumulator dump valve is restricted or plugged.

Adjusting the Throttle Linkage, Dash Pot and Accelerator Vacuum Switch.

The dash pot is included in the throttle control linkage to cushion the closing of throttle valves when the accelerator pedal is suddenly released while driving. This prevents sudden shut off which might cause stalling of engine. The dash pot action is controlled by a spring and vacuum operated diaphragm, ball check valve, and a calibrated bypass bleed.

The dash pot operating lever and adjusting screw are mounted on the lower end of accelerator equalizer shaft so that the adjusting screw contacts the plunger of dash pot, which is mounted on the equalizer shaft lower bracket. A pipe connects the dash pot to the intake manifold. See Fig. 3.

Adjusting the Throttle Linkage and Dash Pot.

Improper adjustment of the throttle linkage and dash pot may cause engine racing or stalling. Adjustments should be checked and corrected as follows:

Warm up engine and adjust carburetor to give smooth idling at 450 rpm, with the fast idle cam in the hot position.

Check the clearance between the equalizer shaft lower bracket and the stop on lever at lower end of equalizer shaft.

Clearance should be $1/32$ in. to $1/16$ in. Adjust it to the specified limits, if necessary, by adjusting the throttle operating rod at ball joint.

With the engine shut off, check for full opening of throttle valve when accelerator pedal hits the floor mat, which must be in place. Full opening should be obtained when pedal strikes the floor mat, rather than having the stop on throttle lever strike the boss on carburetor throttle body. Adjust accelerator pedal rod at ball joint, if necessary, to obtain full opening of throttle valve.

Hold the fast idle cam in the cold idle position (choke valve closed) and check the clearance between the fast idle cam and the fast idle adjustment screw (Carter) or throttle stop screw (Stromberg).

(Continued on page 84)

Rolls up the car... EASY
Rings up the cash... FAST

Saginaw

RECIRCULATING-BALL

BUMPER JACK

Here is a real sales opportunity for you. No other bumper jack works like this one. The Saginaw Recirculating-Ball Jack literally *rolls* a car up into the air. And it will *ring* up sales for you too.

Rolling balls are inserted between the threads where they recirculate through a special raceway. They recirculate continuously to cut friction and increase efficiency.

The shaft is a sturdy pressed-steel frame — solid and rugged. The base is rigidly attached — can't come loose. A specially designed brake prevents the handle from spinning while the car is being lowered.

These features add up to the easiest operating, safest, sturdiest bumper jack ever built. That's what every car owner needs and wants. That's your sales opportunity.



TESTED AND PROVED PRINCIPLE

The Saginaw Recirculating-Ball principle has been proved in over a quarter million bumper jacks and over a million automotive steering gears.

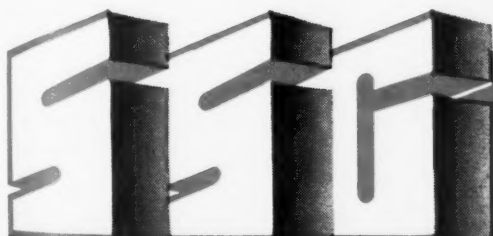
Saginaw Recirculating-Ball Bumper Jacks are available through United Motors distributors. Call yours today!



A CHILD CAN OPERATE IT—
 lifts any car easily, safely.

DEPENDABLE—
 no fluid to leak —always ready to use.

FOOLPROOF—
 recirculating-ball principle rolls up the weight—will not slip.



PRODUCTS

Saginaw

STEERING GEAR DIVISION
 General Motors Corporation, Saginaw, Michigan

STEERING GEAR AND LINKAGES • TURN SIGNALS
 PROPELLER SHAFTS • TRANSMISSION CONTROLS

Clearance should be 1/64 in. to 1/32 in. Adjust to specified limits, if necessary, by turning the spring-locked screw on the dash pot operating lever at the lower end of the equalizer shaft.

If the dash pot does not operate properly after all the adjustments are correctly made, check for loose connections or defective hose in the suction line. Remove the ball check from the dash pot and blow out the bleed hole. Check the lock nut around the plunger to make sure that it is not too tight and causing the plunger to stick. If the plunger is bent, or suggested corrections do not correct the trouble, replace the dash pot.

Adjusting the Accelerator Vacuum Switch Timing.

Improper adjustment of the dash pot may not permit the throttle to close far enough to release the lock-out in the accelerator vacuum switch, resulting in failure of the switch to make contact for starting the engine. Before doing any work on the vacuum switch the throttle linkage and wash pot adjustments should be checked as described in the above paragraphs.

If the accelerator vacuum switch does not operate properly after the linkage and dash pot adjustments are correctly made, check the vacuum switch timing.

Adjusting the Low and Reverse Band.

Chatter or slippage in low or reverse may be due to improper band adjustment. A very slight chatter just as the car starts to move in reverse, which disappears as soon as car is in motion, is considered normal. Band adjustment should be made only if the chatter is severe enough to be objectionable.

Recommended procedure for adjusting either low or reverse band is as follows:

Remove the front floor mat, insulation pad, and transmission opening pan from body floor pan. Remove the band adjustment cover and gasket. Loosen the lock nut and turn the adjusting screw clockwise until considerable resistance is felt, indicating that band is in full contact with the drum (low) or

ring gear (reverse). Back off screw until just a trace of play can be felt by prying up on the lock nut with a screwdriver. From that point, back off the screw six (6) complete turns and snug up the lock nut. After noting the position of the adjusting screw slot, tighten the lock nut to 20-25 ft. lbs. torque. Remove torque wrench and check to make sure that adjusting screw did not turn. Install the band adjustment cover with a new gasket. Install the transmission opening pan, insulation pad, and front floor mat.

After the transmission is removed from the car and the outside is thoroughly cleaned, proceed with the disassembly as follows:

Remove the shift lever. The lever should be held in the forward position to prevent straining the linkage when removing the nut. Remove the oil cooler and pipes if not already removed. If the valve and servo body are to be removed, remove both band adjustment cov-



ers and gaskets using Tool J 2655. Take out the oil gage rod if of the first type. Remove both pipe plugs from the primary pump cover to drain any oil remaining in the converter. Turn the transmission over, with the oil pan up and the bell housing resting on a bench.

Converter and Bell Housing Removal.

This operation is not required for removal of the valve and servo body, universal joint or rear bearing retainer.

Drain the converter and remove the primary pump cover. Hold cover to prevent turning by inserting a punch in the drive bolt holes through the bell housing hand hole. Screw the cap screws into the three tapped holes in the pump cover to loosen and remove the cover as in Fig. 5a.

Remove the torque converter spacer and shim washers which may be either on the input shaft or in the bearing recess of the pump cover. Push against the end of the input shaft to avoid withdrawing this shaft with converter turbine and remove the turbine as in Fig. 4.

Check each stator for free-wheel clutch slippage. The stators should rotate freely in a clockwise direction but lock tight in the opposite direction.

Use a narrow pointed tool to remove the retaining ring from the reaction shaft. Remove both stators as one unit—their separation will result in clutch parts flying out.

Check the secondary pump for free-wheel clutch slippage. The pump should turn freely in a clockwise direction but lock tight in the opposite direction.

Pull the primary and secondary pump assembly forward from reaction shaft and immediately check for evidence of oil leakage. Radial streaks of fresh oil on the back of the primary pump and fresh oil running down the face of the front oil pump body indicate leakage past the oil pump seal.

Before removing the bell housing check to see if all attaching bolts are tight. Loose bolts may be the cause of oil leakage at this point.

Put the bell housing over the edge of the bench and remove it. Examine the rubber oil seal located around the front oil pump to see whether it has been uniformly compressed by the bell housing; if not, check for any obstacle that may be around the oil pump or opening in the bell housing that would prevent uniform compression of the seal.

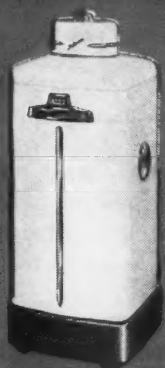
Removing Oil Pan, Valve and Servo Body Assembly.

(Continued on page 100)



IDENTIFIED
SERVICE

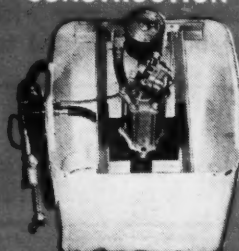
EYE-APPEAL
DESIGN



EXCLUSIVE
HI-LO
PRESSURE
PUMP



STURDIER
CONSTRUCTION



PUMPING LEVER
AT HAND LEVEL



CONVENIENT LOCATION
OF SERVICE ASSEMBLY

ARO'S GOT THE FEATURES

TO BRING YOU TOP PROFITS
IN LUBE SERVICE!

New ECONOMICAL—CONVENIENT DRAIN EXTENSION



Solves the problem of crank-case drainage on cars having hard-to-reach drain plugs. Clipped to the edge of a drain funnel, it allows easy oil draining while giving complete clearance from the lift.

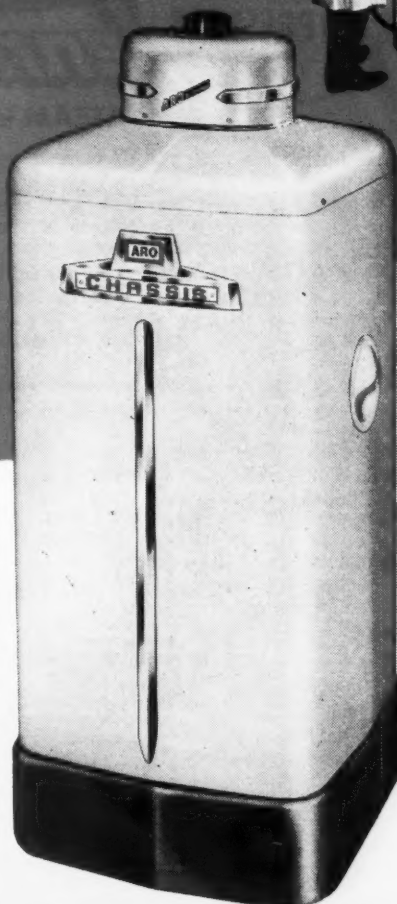
ARO's ahead in all 3—*design... performance... dependability*—to make your lube department PROFITS soar!

Aro has the smart clean look-of-tomorrow that attracts customers! Aro *saves time and labor* with easy-to-use service assembly... pumping lever at hand level... and Aro's famous *exclusive HI-LO PRESSURE PUMP*! This pump means you can use LO pressure, up to 1800 lbs., for 90% of all fittings—or you can switch instantly to HI, up to 6000 lbs., for the tough ones. This saves time... prolongs life of hose and equipment... produces 25% to 40% more jobs from your lubricant... and saves air! Aro has equipment and accessories to perform automatic transmission service. Feature by feature—ARO gives you *more* to help you PROFIT! Aro-built for long-life dependability. See your Aro Jobber.

The Aro Equipment
Corporation, Bryan, O.

In Canada: Aro of Canada, Ltd.,
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ARO



LUBRICATING EQUIPMENT

ALSO... AIR TOOLS... HYDRAULIC EQUIPMENT
AIRCRAFT PRODUCTS... GREASE FITTINGS

Trained Mechanics . . . Continued from Page 49

outlet for their skill and inventiveness. When automotive service graduated from the blacksmith shop to the service garage there was no difficulty in finding bright young men to become auto mechanics.

It was considered a romantic business and young men with no previous training were glad to ap-

prentice themselves to such an attractive business. The pay was low and working conditions left a lot to be desired, but where else could one learn such a fascinating trade so easily and at the same time get to drive a car that he could not have afforded to own.

The product itself needed a lot of service but mechanically it was

rather simple. Fits and clearances were not so important. A thin dime served the purpose well enough for spark plug gapping. A good car was the main requisite for a motor tune-up.

Most owners were mechanics themselves, but when the automobile manufacturers began to add refinement after refinement to the cars the service garage became a necessity. Synchromesh transmission, hydraulic brakes, independent front wheel suspension, voltage regulators and many other new things were introduced in quick succession. The thin dime gave way to the feeler gauge, the jacks and chains were replaced by front end and frame alignment equipment. That good ear could not cope with the motor analyzer.

Now, there wouldn't be such a discouraging problem if it was only necessary to double the number of mechanics when the service volume doubles. That's the way the bricklayers and carpenters do it. A bricklayer is trained today precisely the same as he was fifty years ago. For an auto mechanic each year the problem becomes more complicated.

Consider this fact for a moment, in relation to the educational and training requirements for a mechanic.

Today's motor vehicle has in it: A power plant, a lighting plant, a heating plant, a ventilating system, a radio receiving station, it has architecture — a roof, walls, floor and windows.

It might not be too difficult to become a specialist in any one of these categories but the service business cannot economically become specialized nationally.

Fifty per cent of the automobile dealers and 89 per cent of the independent repair shops employ less than eight people in all departments.

A man who takes his car into a service department in Crossroads, Iowa, expects the same competent service as the man who lives in Chicago or Detroit.

Through the Automobile Manufacturers Association we decided to form a committee to study the situation. The availability of good service nationally is of vital impor-

(Continued on page 88)



Don't WISH for more money... MAKE it with

HYPRESSURE Jenny STEAM CLEANER

Is profitable business passing you up because you're not equipped to take care of it?

With Hypressure Jenny you can add many "extra-profit" services to your line by doing the jobs car owners need—and want. Jenny brings new customers in, and keeps them coming back.

Hypressure Jenny will clean a car motor "like new", in 15 minutes . . . rid radiator and front-end grille work of bugs and leaves . . . cut grease, mud and road dirt from springs, frame and fenders . . . prepare cars for undercoating, etc. Pay for such services averages \$10 to \$12 an hour.

With combination Hypressure Jenny and Steam Thoro-Purge, you can increase your business as much as \$10,000 a year on cooling system cleaning alone.

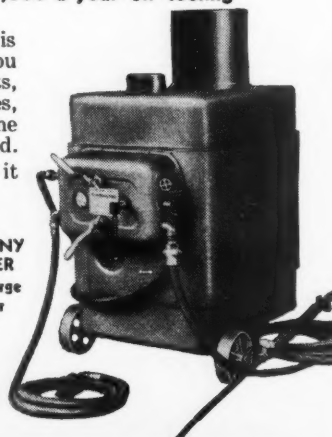
And all the while Hypressure Jenny is making you more money it is saving you money too by keeping your equipment, lifts, floors, walls, windows, driveways, lavatories, etc. clean as a pin at only one-tenth the time and cost you now take to clean them by hand.

Don't wish for more money . . . MAKE it with Hypressure Jenny Steam Cleaner.



Service Master
HYPRESSURE JENNY
STEAM CLEANER
with Steam Thoro-Purge
mounted on cover

Get the complete story in this
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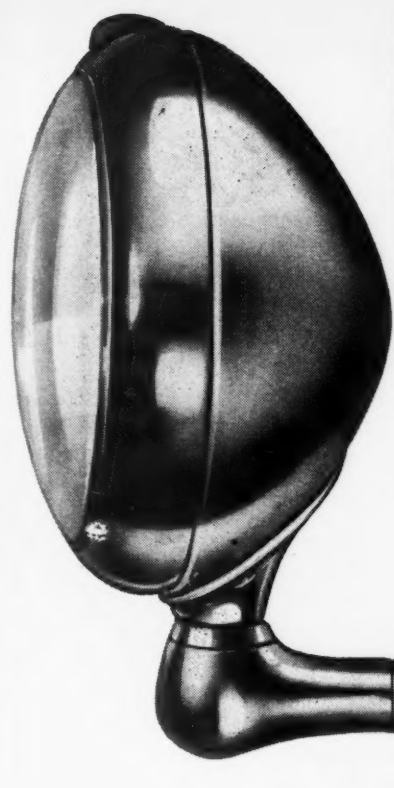
HYPRESSURE JENNY DIVISION

HOMESTEAD VALVE MANUFACTURING COMPANY

"Serving Since 1892"

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CORAOPLIS, PA.



NOW...

THE NEW LORRAINE

**More than ever...
the World's Finest Driving Light**



Profit-Making Features Galore!

- Exclusive Rotary Switch. Unmatched anywhere for convenient, positive operation.
- Exclusive Wireless Construction. Complete protection against shorts.
- Full 360-degree continuous turning radius.
- Sealed Beam Spotlight Unit provides half-mile range, prevents reflector deterioration.
- Door or corner post, right or left-hand mounting.
- Distinctive red lucite ornament on lamphead.
- Easily installed in average time of twenty minutes.
- Specially designed brass bevel gears provide unexcelled mechanical efficiency.
- Popularly priced to assure quick profits, fast turnover.
- Beautiful self-demonstrating display stand.

Write for information concerning distributorship in your area.



Fun to sell... fun to buy

Set up the new Lorraine Self-Demonstrating Display and watch the fun begin! Customers can't pass it up. They experiment, they demonstrate, they *buy*! Easy selling? Mister, you know it is! You install Lorraine Driving Lights in a matter of minutes... then sit back and tally up the profits.

APPLETON ELECTRIC COMPANY

Manufacturers of Lorraine and Appleton Spotlights

1725 WELLINGTON AVENUE • CHICAGO 13, ILLINOIS



tance to every car manufacturer.

In our aim to get more and at the same time better mechanics we found not one, but a series of complex problems.

Since we could get our young mechanics only from the public schools, we combined our forces with a group of top-notch educators from the American Vocational As-

sociation. This group represents 31,000 educators in the vocational and technical field.

We found a series of disturbing circumstances in the public vocational and technical schools.

The auto mechanics classes were being used as a dumping ground for the substandard or incorrigible students. This tended to keep out

the better students even though they might like to take auto mechanics.

The auto mechanics instructors were often men who had had no contact with the industry in the last fifteen to twenty years. Many of them when questioned had only the vaguest conception of the more recent mechanical developments.

The auto shop itself, where the training was being given, was invariably years behind on equipment and demonstration units. The engine and chassis assemblies were usually obtained from the police junk yards. Equipment was of the crudest type and much of it was inoperative.

Since the instructor ordinarily had so little knowledge of the fundamentals of automotive theory such as electricity, hydraulics and mechanisms, the students couldn't hope to get anything except a once over lightly on common maintenance.

Now what sounds like a tirade on American public education is not meant to be that at all. The fault, if any, is ours.

We have left the schools to fend for themselves. They get their equipment wherever they can. They interpret for themselves what type of training is needed. Their instructors get little or no recognition from the car dealers and garage operators.

Well, we've been trying to make up for lost time. It would take too long to detail all that has been done but I will give you the highlights.

Dealers have been encouraged to invite the local teachers to their service meetings.

We have arranged for summer conferences of all of the auto instructors in a state. At these conferences, lasting from two to five weeks, we send the best of the industry's instructors to hold training courses on specific subjects.

A special course has been designed at Wayne University in Detroit to train auto mechanics teachers. This takes five years minimum and includes a vast amount of industry participation. For instance, Bear has been most cooperative in taking these potential instructors into their school here in Rock Island for the regular

(Continued on page 90)

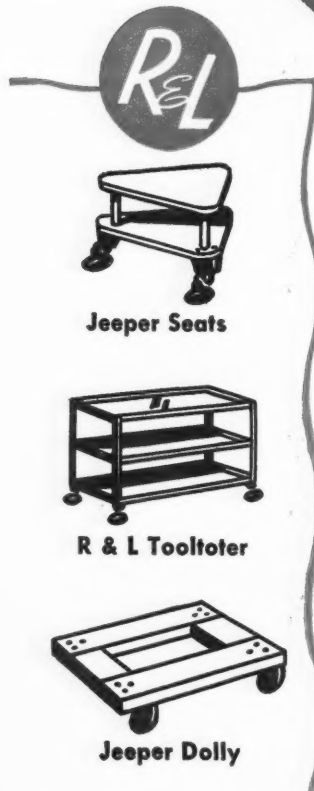


Be Thrifty in '50!

In addition to a product's price tag, find out how it performs, how well it is built. You'll quickly learn that every R & L product has the features and quality you want—at a thrifty price.

JEEPERS CREEPER

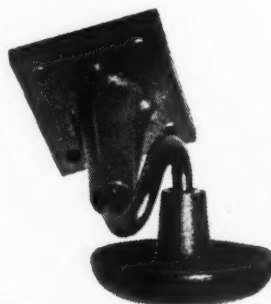
Outstanding value has made it America's most popular creeper. Tops in performance because only the Jeepers Creeper is equipped with the remarkable Ralco Roller.



EVERYTHING ROLLS BETTER ON

RALCO ROLLERS

Every piece of equipment will roll easier on Ralco Rollers. Sold in sets and specially designed for creepers, dollies, lubrication equipment, tool chests, etc. Inexpensive.



Write for catalog

R & L MANUFACTURING CO.
1945 N. 12th St. Toledo 1, Ohio

Add to customers' satisfaction with

MOPAR

CYCLEBOND BRAKE LINING



ENGINEERED



INSPECTED



**SUPPLIED
by Chrysler
Corporation**



No Rivets!

No Rivet Holes!

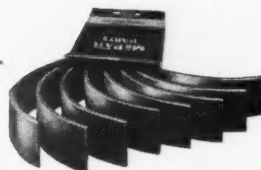
Up to 75% Longer Wear!

Bonded directly to brake shoe! Your customers enjoy safe, sure braking virtually down to the brake shoe.

More effective braking! Surface intact from one end to the other. More lining area in contact with drum.

Less drum scoring! No rivet holes to become clogged with drum-scoring grit and dirt.

Two Types Available



Pre-cemented MoPar Cyclebond Lining Sets. For all cars and trucks built by Chrysler Corporation. Ready for bonding to brake shoes.



MoPar Brake Shoe and Cyclebond Lining Assemblies. Ready to install. Factory-bonded. No special installation equipment needed.

You can get
MOPAR parts
from dealers

FOR

PLYMOUTH • DODGE • DE SOTO • CHRYSLER
CARS • DODGE "Job-Rated" TRUCKS

...and from most independent garages

Trained Mechanics . . . Continued from Page 88

course of instruction. They also go to Barrett and Carter in St. Louis, Sun in Detroit, Perfect Circle in Hagerstown and General Motors Institute in Flint.

General Motors has put all the material it offers into a catalogue entitled "General Motors Aids to Education." Chrysler is distributing a special packet of training

aids to the schools and other manufacturers are engaged in similar projects.

A standardized course of study has been drawn up by the educator members of our group. In this course the emphasis has been taken away from routine service jobs and placed on fundamental knowledge. The proper diagnosis of unsatisfac-


tory operation has been the goal of the training. How to properly use tools and equipment is the basis for an entire course. If a boy understands how to properly use the tools of the trade then he can do any job if he is equipped with a shop manual listing the procedure and the specifications. This is the basic course and is to be given initially. After that is accomplished then the training is to be concentrated on diagnosis.

It is all well and good to do these things on a national basis, but we are not Pollyannas. The place for accomplishment is at the local level. It is between the schools and the dealers and other employers of auto mechanics.

The local employer is the one to take the real action.

Last fall we made a presentation to every General Motors dealer in the country on this subject. We asked him to:

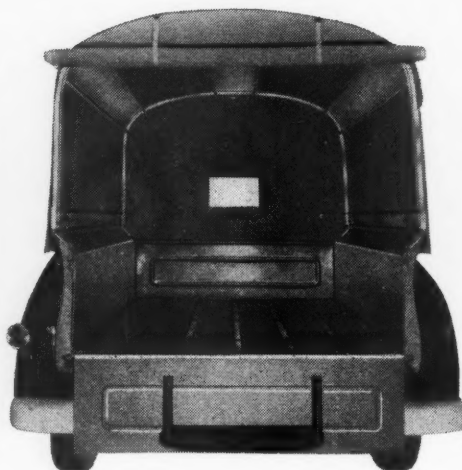
1. Get acquainted with all school authorities, particularly the auto teacher.
2. Assign his service manager the job of acquainting the auto mechanics teacher with the service requirements and peculiarities of his product.
3. Invite the auto class to use his equipment if the school did not have such equipment.
4. Employ the auto teacher during summer vacation.
5. Offer scholarships and sponsorships to such technical institutions as General Motors Institute.
6. Offer prizes to top students.
7. Point out automotive opportunities to the vocational guidance counsellors.



Mr. Dealer!

Here's the item
that Helps to sell
More New and
Used Pickups

**the NEW, 1950
REMOVABLE**



»» CARAVAN TOP »»

Now you can put new life into pickup truck sales—new or used—with the popular Removable Caravan Top.

Practically every pickup owner or purchaser needs protection for hauling loads and still wants the utility of the open pickup.

This is all possible with Caravan Top! Made of sturdy aluminum alloy frame with waterproof and mildew resistant heavy duck cover—one man can remove or install in minutes.

New patented hold-down plates keep the cover snug and trim. Plastic window for plenty of rear vision.

ZIPPER BACK OPENING

Two husky slide fasteners hold each side of rear curtain. Can be rolled and held in up position.

ALUMINUM ALLOY FRAME

By loosening four corner nuts, top and frame are quickly removed as one unit. Easy to assemble and install.

LIST PRICE
\$89.50

Complete cover and
frame for ½ ton
model

State & Fed. Taxes Extra



These
PICKUP OWNERS NEED
CARAVAN TOPS

FARMERS
TRUCK GARDENERS
CONTRACTORS
RETAIL STORES
MANUFACTURERS

ELECTRICIANS
PAINTERS
PLUMBERS
GARAGES
RENT-A-TRUCK

AND MANY OTHERS!

WRITE TODAY FOR LITERATURE AND PRICES

C. K. TURK CORP.

1124 Mishawaka Ave. • South Bend 15, Indiana





Geo. M. Weitz of Snap-on Tools, J. D. Johnson, Service Manager, and Frank Woods of Frank Woods, Inc., Charlotte, N. C. inspect a new Snap-on Roll-Cab and set of Snap-on tools.

Big INCREASE IN EARNINGS

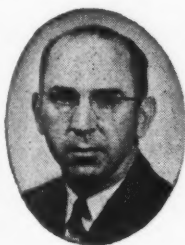
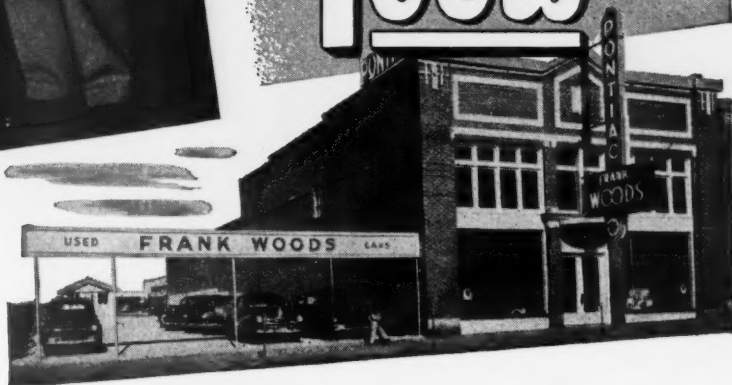
★ for Mechanics

★ for Companies

with

Snap-on*

Tools



"More Satisfied Customers because of finer quality work since our mechanics brought their equipment up-to-date with Snap-ons", says J. D. Johnson, Service Manager of Frank Woods, Inc., Charlotte.

J. D. Johnson, President of the Service Managers Association, knows that good tools as well as good equipment are important in selling an increased volume of service. An expert mechanic himself, he knows that a complete kit of Snap-on tools contributes to speed, good workmanship, and bigger pay envelopes.



"With my new Roll-away cabinet and new Snap-on tool set, I can do a job 40% faster," says mechanic Charles Stewart of Frank Woods, Inc., Charlotte, N.C.

Charles Stewart is an expert mechanic. He says this, "As long as I stay in the mechanical end of the automobile business, I will never be without my Snap-on tool set." For many years better mechanics like Charlie have discovered that Snap-on gives them safe, speedy wrenches and tools . . . the right one for every job.

*"Snap-on" is the trademark of the Snap-on Tools Corp.



Look for the Snap-on man. He calls at your shop with the tools you need.

SNAP-ON TOOLS CORPORATION

8036-B 28th Avenue, Kenosha, Wisconsin

for 30 years, Snap-on's nation-wide Tool Service has proved to be

"The Time-Saving Way to buy Time-Saving Tools!"

NOW...a complete line of NEW FUEL PUMPS by



*Turn Out Top
Notch Tune-Up
Jobs with P & D*

• With the new P.&D. fuel pump line you give customers all the advantages of the exclusive P. & D. NYLO-PRENE® diaphragm—an outstanding engineering advance that assures longer, more trouble-free fuel pump life than ever before possible.

The complete line of P.&D. fuel pumps gives you exact-dimensional, perfect-fitting replacements for all automobile, truck, bus, marine, airplane and industrial engines. Write today for catalogs and price sheets.

P&D

MANUFACTURING COMPANY, INC.
LONG ISLAND CITY 5, N. Y.

1950 Hudson

Continued from page 44

newly designed mushroom type and are pressure-lubricated. Positive rotation of the tappets is said to be assured by use of an angular cam surface which increases tappet life and contributes to quiet operation. This engine is rated at 123 h.p., with a displacement of 262 in. The Super-Eight engines, rated at 128 h.p. have a 254 cu. in. displacement. An aluminum intake manifold is said to assure improved carburetion and smoother operation. A new cooling system of the closed pressure type is introduced this year. Operating at a pressure of 7 lbs., this system is designed to prevent overheating in slow-moving traffic. The pressure system results in raising the boiling temperature of the coolant more than 20 degrees. Improvements in the cellular-tubular radiator coupled with a new water pump seal result in better engine cooling without loss of coolant.

The fluid cushion single plate type clutch has been redesigned to reduce possibility of grinding or chattering. Transmissions are also said to be redesigned to permit easier, smoother shifting at all speeds. Improved operation of overdrive has been made possible through use of a large steady bearing at the planet gear, a new simplified relay and solenoid equipment as well as the addition of a fuse to the system.

All models now offer Hudson Supermatic drive as optional equipment. This unit is an automatic transmission combining overdrive. The automatic transmission, designated as Drivemaster, provides for changing from automatic transmission to conventional drive or to automatic clutch operation by the touch of a button. Hudsons are available either with standard transmission, with the Drivemaster, with standard transmission combined with overdrive, or with the combination of Drivemaster and overdrive, which is Supermatic drive. Hudson continues to offer the "step-down" design with recessed floors in an all-welded, all-steel metal built body and frame.

A Blonde

Continued from page 39

horsepower—more than two horsepower for each pound of engine weight.

Alfred P. Sloan, Jr., chairman of the GM board proudly announced that all General Motors cars are available with automatic transmissions. This represents, he said, "one of the most outstanding technical developments of the industry in many years. To bring us to the point we have now reached, it has taken 20 years of engineering development, including the study and ultimate discard of many designs, the expenditure of millions of dollars in experimental work and an investment in excess of 65 million dollars. . . .

"We now have several types of automatic transmissions," Mr. Sloan said. "The reason for this symbolizes our philosophy of management. Each General Motors unit is encouraged to develop and adopt that which its individual management believes to be best. We operate a free competitive economy within ourselves. Our competition is one division against another, as well as against firms on the outside. In no way can we develop the best except through the process of trial and error by actual experience on a broad scale. . . ."

N.S.P.A. Program Planned

Officers, directors and committeemen of the National Standard Parts Association have completed plans for a diversified program for members in 1950. These plans were formulated last month in Chicago, at the initial meetings of the new boards elected in November and committees appointed by President G. Walter Kleinschmit.

Approved by the board of directors were projects covering sales training, sales promotion, management control, business research and education. One of these new programs is a series of eight sales training sound slidefilms which will be available to members within a short time either on a rental or outright purchase basis.

Springtime
is **PROFIT TIME....**
WITH **BOWES**
Radiator Chemicals!

● Just as sure as the icicles melt and the first signs of Spring appear . . . radiators need to be flushed of winter's accumulated dirt and put in shape for warmer weather. Motorists *know* that—you don't have to sell them the idea. What you *do* need for quick, steady Spring profits is a good supply of BOWES Radiator Chemicals, prominently displayed and strongly recommended to your customers. The business is waiting for you if you push *all three* of these popular, good profit items as a *complete* radiator service!



RADIATOR KLEN-ZUR

Goes right to work and removes the rust and dirt of winter . . . makes the entire cooling system clean as new.

RUST-ROUT

Protects the cooling system by preventing the accumulation of more rust, and lubricates water pump.

RADIATOR STOP-LEAK

Any time you remove accumulated rust, small leaks may show up. BOWES Radiator Stop-Leak completely seals existing leaks and prevents new ones.

MORE PROFIT FOR YOU—

Don't forget hose, fan belts, oil filter cartridges, battery cables, and other parts that suffer during the winter. While his hood's up—get him *really* ready for Spring. Do your customer a favor and make *extra* profits by suggesting replacement with BOWES "smoother motoring" replacement parts.



BOWES "SEAL FAST" CORPORATION

INDIANAPOLIS 7, INDIANA

Reconditioning Continued from Page 57

repaired perfectly, and dips and waves will be quickly noticed. The function of chrome molding is to dress up the car by attracting the eye and creating a graceful, easy, flow of lines from front to rear. This distracts the eye from the body panels by breaking up the solid color block.

Noise level can be greatly re-

duced by undercoating the inside of the trunk, and under the fenders. Engine noise will be greatly reduced by undercoating the hood. Because of the sound-deadening action of undercoating, the metal will not have the thin ring when thumped by customers who attempt to judge strength by sound.

Once the customer is attracted

by the outside appearance of the car, his attraction must be maintained by the appeal of the interior. The moisture content of winter and spring air is high, and dust particles are suspended and carried by the moisture. Heating the cold air inside the car causes a condensation of the moisture which precipitates on the upholstery and head lining. There it is trapped and rubbed in by persons using the automobile, causing excessive wear.

Reconditioning materials are now on the market and may be purchased in economical kits that supply all that is needed to rejuvenate the interior of the car. The kits contain cleaning detergents, spotting fluids, plastic dyes, clear coating, dyes and upholstery tints, steering wheel paint and putty, multi-purpose adhesive, and a molding regaining kit.

Attention should be given to the condition of the inside rubber. It is often practical to install a complete new set, consisting of floor mat, accelerator, pedal, brake, and clutch pedal pads. New rubber, a refinished steering wheel, and a thorough cleaning job will enhance the interior, giving it an added appeal to maintain customer interest.

Cost of the vitalizing operation may be minimized in various ways. The work should be done well enough to come up to high standards of quality, and rapidly enough to keep cost at a low minimum. This may be accomplished by specialization, for as the techniques become learned, the time rate of production will be stepped up accordingly. Body work should be sub-letted to the body shop. This allows for maximum specialization and also provides work for the shop in slack periods, to meet the cost of overhead.

Packaged, or grouped procedures, will tend to familiarize the worker with the face-lifting routine, and increase efficiency. This also eliminates the possibility of overlooking minor points that may stand out in the customer's eye.

It will be difficult for customers to find even a little more to be done to improve the appearance of their cars. Satisfied customers become good customers, and good customers create a well-rounded business, even in a competitive market.



"it's in the cards"
when you sell
SERCO

for sealing
● radiators
● heads
● blocks

**Steady volume, repeat business,
satisfied customers. They all add up to
profit...profit you get by selling SERCO.**

SERCO seals all types of leaks in automotive cooling systems quickly and thoroughly. It's a one-application seal that sells and stays sold. SERCO remains in suspension in radiator coolants. It flows freely through an engine's cooling system sealing each leak, large or small, with a flexible wedge between the edges of the metal. SERCO forms a more lasting seal because it actually gains strength with heat and age.

Don't gamble with unknown, untried brands. Stock and sell quality SERCO products . . . used by millions of motorists all over the world and *guaranteed satisfactory.*


Ask your favorite jobber or write today for literature.

Service Supply Co.

1115 SEVENTH ST. • DENVER 4, COLO.

AUBURN CLUTCH

Announces

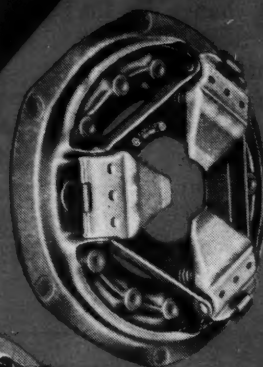
40 ADDITIONAL CLUTCH COVERS AND MATCHED UNITS

Ready for Shipment—
for the . . .

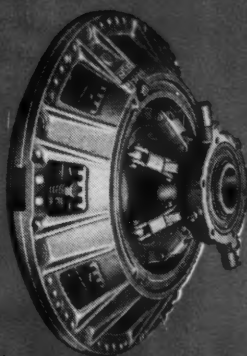
8½", 9", 9¼", 10½", 10¾"
and 11" applications
for cars, taxicabs, buses, trac-
tors and ½, ¾, 1, 1½, 2 and
2½ ton trucks.

19 ADDITIONAL CLUTCH PLATES

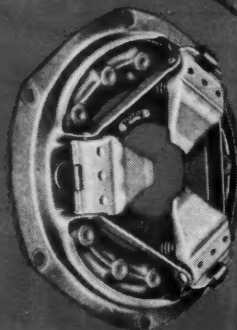
Making a total of
126 from 6½" to
17" provide COM-
PLETE PLATE
COVERAGE.



11"



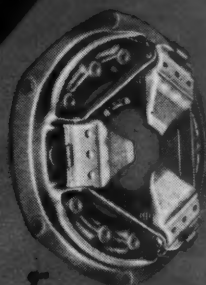
14", 15" and 17"



10½" and 10¾"



9¼"



6½"



7"

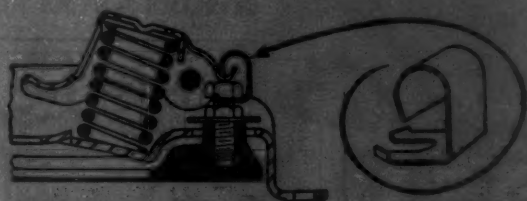


8¾"



COVER
REMOVED
TO SHOW
CONSTRUCTION

Over three million in service



Three flat spring steel clips connect-
ing outer end of release levers with
pressure plate provide a "new" posi-
tive pull-back feature.

HIGHEST QUALITY FACINGS B.L.M.A.
DRILLED

New patented "cross-over" spring
cushion segments give smooth engage-
ment and full facing contact.



COMPLETE
DAMPER UNIT
ASSEMBLY



Friction Spring Sleeve Drive Spring Drive Button

Drive buttons slide under tension of spring sleeve in
the Auburn patented "Shock Absorber Action"
DAMPER UNIT to absorb engine impulses and
eliminate gear rattle.

AUBURN CLUTCH CO.

Annual Capacity Over a Million Complete Clutch Assemblies and Plates

WAREHOUSE STOCKS IN 39 MAJOR DISTRIBUTING CENTERS

DANA PRODUCTS

AUBURN CLUTCH CO.

DIVISION OF DANA CORPORATION

TOLEDO 1, OHIO, U.S.A.



1950 Cadillac Continued from Page 45

With a complete change in the front suspension system, caster and camber adjustments have been simplified to allow for more adjustment than before.

The mounting of direct acting shock absorbers at the rear in "sea-leg" fashion serves the dual function of minimizing transverse shake and controlling the ride, thus

making the previously used track bar unnecessary.

Incident to the adoption of an entirely new line of bodies, there has been a change in wheelbases as follows:

Series	1950	1949
61	122 in.	126 in.
62	126 in.	126 in.
60S	130 in.	133 in.
75	146 3/4 in.	136 1/4 in.
86 (comm. chassis)	157	163

The entire set-up of body models, overall length, overall height dimensions, and curb weight has been given in tabular form. It is of interest that although the wheelbase of both Series 61 and 60S has been decreased, body length and roominess in general have actually increased somewhat because of changes in body structure and by moving the body forward, on the chassis. This was made possible by forward shifting of the engine by five inches.

Improvement has been effected in the brake system on Series 61, 62, and 60S by increasing braking area while reducing rubbing velocity. This has been accomplished by increasing lining width and reducing brake diameter. Brake cooling is improved thereby and lining life is said to be increased. Although braking ratio front to rear remains the same, the brakes are said to be more effective because of the change in weight distribution.

While the high compression V-8 engine remains basically unchanged, Cadillac has effected a number of important changes in details and in accessories. The most significant improvement is in the introduction of a carburetor idle heating system. During the warm-up period, the thermostatically controlled heat valve in the exhaust manifold system diverts the heated exhaust gases into the heat passage under the intake manifold. For 1950 this heated

(Continued on page 98)



PROFIT PACKAGE FOR 1950

Make more satisfied customers in 1950. Let Burd back up your installation know-how with the combination sets that guarantee oil control. In well-worn cylinders use Burd "Super Hi-Speed" Oil Rings. They provide a special wide-channel cast iron ring with exclusive ventilated expander to assure uniform contact over the entire cylinder wall . . . two steel segments installed below the cast ring for additional wiping action without excessive wear. Burd "Super Hi-Speeds" are available in combination sets for all makes and models. Get them from your Burd jobber . . . today!

BURD PISTON RING CO., ROCKFORD, ILLINOIS



"Don't ever go riding with Eddie—he's one of those back seat strivers!"

SELL SAFETY!

CONVERT ALL POPULAR CARS and TRUCKS **1942-49** with

*Big Profits
Come Easy!*

A SINGLE KIT CONVERTS
PARKING LIGHTS •
STOP LIGHTS • TAIL LIGHTS
into COMBINATION
DIRECTIONAL SIGNALS

Pathfinder
4-LIGHT
(FRONT AND REAR)
DIRECTIONAL SIGNAL
CONVERSION KITS

No. UN67F

FOR EXTRA PROFITS

DISPLAY

AND SELL

Pathfinder
UNIVERSAL
DIRECTIONAL SIGNALS

New popular-priced set in wide demand! Consists of 2 clear-lens front lights, 2 red-lens rear lights, Tungsol flasher and fingertip control switch with blinking eye.

Get the sturdy metal self-demonstrator, fully wired . . . FREE (except for merchandise) with stock order for complete sets.



**13 KITS FIT ALL POPULAR
1942-49 CARS AND TRUCKS**

A startling new conversion kit that adds a directional signal system to present car lighting. Double filament bulbs and sockets convert parking lights into combination parking and directional signal lights, and adds a directional signal to present Stop or Tail lights. No mounting of additional equipment . . . no drilling, no tapping needed. Tailored to fit. Conversion kits include directional signal switch, flasher, bulbs, sockets and wiring.

Write Today for Car Application Chart!

AUTO LAMP Manufacturing Co.

2909 INDIANA AVENUE CHICAGO 16, ILLINOIS

Contact your **JOBBER** or
Write, Phone or Wire Now to:

mixture is also led upward through the carburetor to the area around the idle ports. This is said to prevent ice formation at the idle ports, and thus serves to eliminate engine stalling during warm up in cold, humid weather.

Because of the lowered hood line, the air cleaner is mounted lower and the new carburetor reduced in

height to provide clearance. Carburetor calibration has been improved to provide better fuel economy at low speeds. The fuel and vacuum pump unit has larger valves to eliminate vapor lock and assure fuel delivery under hot operating conditions.

Piston pins are assembled with a press fit in the con rods to elimi-

nate wear at this point and to promote noise-free operation. Piston pin bearing length in the piston has been increased to further reduce wear.

Several changes have been effected in the valve gear mechanism—in the camshaft, push rods, rocker arms and brackets, to reduce valve gear noise and increase life. New type valve guides provide better valve stem lubrication.

A new oval type muffler is designed to improve silencing, conserve space and permit the body to be mounted lower. The outer seal is of sandwich construction consisting of two metal shells and a layer of heavy asbestos to lower noise level and reduce floor temperature.

With the relocation of the fuel tank by mounting it directly to the body, the fuel gage has been moved to the front of the tank to permit its removal without dropping the tank.

Steering quality is said to have been improved by a reduction of wheel kick when crossing tracks or traversing rough roads. These include—an improvement in drag link springs, greater flexibility of the steering column, and a bigger steel core in the steering wheel to increase its inertia.

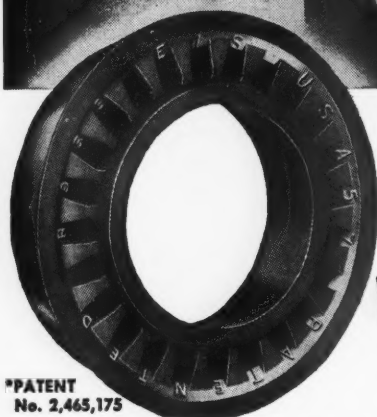
The Hydra-Matic for 1950 incorporates a total of 16 refinements to improve performance, durability, and to simplify servicing. Among the major changes for Cadillac are the following:

1—Modulated oil pressure to provide smoother shifting, particularly at light throttle. Oil pressure is made to vary in accordance with throttle opening so as to give a better compromise between smooth shifts and adequate power to control hydraulic action under high torque conditions.

2—The valve body has been revised to give new shifting characteristics at high speed and to prevent the possibility of down-shifts at speeds above normal.

3—Increased capacity in the front serves to promote smoother shifts.

4—The oil delivery sleeve has been increased in length to provide greater bearing area and longer life.



*PATENT
No. 2,465,175



SPECIALLY DESIGNED FULLY PATENTED* WHEEL CYLINDER CUP for Chrysler Products

BY FAR the logical, most economical unit for this replacement

Strong, flexible ribs molded into EIS R933 Wheel Cylinder Cup—an EIS exclusive—make all the difference in the world! They maintain the proper amount of wall tension . . . give snugger fit of Cup's wall to piston hub. If you wish, you can use R933 on the old piston . . . or you can buy P934, the assembly of R933 and a new, accurate, anodized piston . . . or install a complete Kit—CA-P—including tough, greaseproof neoprene boot. From every angle . . . it will be more economical than other, less certain replacements! So . . . stop wrestling with the problem of finding a Cup for this car family that will stand up in service and at the same time cost the least in the end!



Ask your Jobber
or
write us direct

EIS AUTOMOTIVE CORP. Middletown, Conn.



Dealers Everywhere Find

"Select-O-Seat" Sells More New Cars!

"CHOOSE YOUR OWN COMFORT"

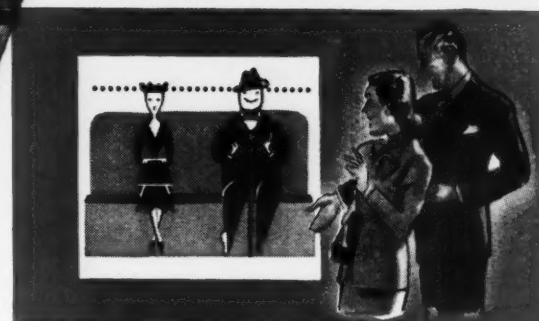
... because "Select-O-Seat" is adjustable to give the riding public "Personalized Comfort"



More than ever, Dealers Sell Comfort! When a dealer sells comfort he sells one of the most important features of a car. When he explains the superiorities of "Select-O-Seat" cushion comfort, plus the simple adjustment service available, he has a tremendous sales advantage!



Dealers show this CAN'T happen . . . It's easy for dealer salesmen to show their customers that unless the car's entire spring cushion is a "Select-O-Seat" design, the extra pocketed coils cannot be added to correct this discomfort shown above. "Select-O-Seat" sells more cars!



"Select-O-Seat" is a comfort treat! Cars factory built with "Select-O-Seats" require no adjustment to assure the average car buyer superior comfort . . . yet "Select-O-Seat" adjusts without delay to suit the special preference of any customer, regardless of weight or height!



Without disturbing the upholstery, the service men, in over 15,000 dealerships of 8 leading makes of new cars, can easily adjust the comfort of "Select-O-Seat" cushions, whenever necessary. They simply flip extra pocketed coil springs into the base of the "Select-O-Seat" cushions in a matter of minutes for greater buoyancy, and to raise eye level for safer vision.



*PATENT AND TRADE MARK APPLIED FOR.

*"Select-O-Seat"
"CHOOSE YOUR OWN COMFORT"

Owners of new cars call it the greatest improvement in seating comfort known . . . Developed and produced by the world's leading supplier of cushion springs for over 40 years.

L. A. YOUNG SPRING & WIRE CORPORATION

GENERAL OFFICES: DETROIT 11, MICH. . . IN CANADA: L. A. YOUNG INDUSTRIES, LTD., WINDSOR, ONT.

Kester Solder



Kester Radiator Solder, Flux-Core, a specialized solder with a higher tin content (50%) and super activated flux, is now available to the trade. The finest solder made for fast, quality radiator work.

Uniform

All Kester Solders are made only from newly mined grade A tin and virgin lead. Fluxes are chemically and scientifically correct. Kester's uniform flux content assures greater dependability.

Efficient

Using the right solder for the job increases efficiency, speeds up the work. Kester Radiator Solder for radiator work; Kester Acid-Core Solder for general work; Kester Plastic Rosin-Core and "Resin-Five" Core Solders for automotive electrical work.

Kester Solder Company
4201 Wrightwood Ave., Chicago 39
Newark, N. J. Brantford, Canada

Send for free
20-page booklet
"Soldering Simplified"

**KESTER
SOLDER**



The Mechanics Standard since 1899

Buick Dynaflow

Continued from page 84

Note: For removal of only the valve and servo body assembly the converter and bell housing need not be removed. The following procedure also may be used with the transmission in the car.

Remove the oil pan and gasket. If the oil screen is the first type (mounted in oil pan) immediately examine the impression made by the oil screen suction pipe in the neoprene sealing ring located in a recess in the servo body. A full impression of the end of the suction pipe in the sealing ring indicates that no air leak existed at this point. Remove the sealing ring. Disconnect the valve operating rod from the valve operating lever (upper) by placing the screwdriver on rod close to lever and exerting slight pressure. A spring loaded socket on the rod engages a ball stud on the lever. See Fig. 5.

If the oil screen is the second type mounted on the valve body, lift the screen away from the suction pipe to which it is held by a rubber grommet snapped into the hole in the screen body. Remove the suction pipe spring support, retaining spring, suction pipe, and cork gasket which seats in the recess in servo body.

Slightly loosen all valve and servo body attaching screws but do not loosen the slotted safety nuts on valve-to-servo-body studs. Remove all screws, turning each a little at a time in succession until the pressure of the anchor piston spring is relieved.

Lightly pry upward on the assembly to free the gasket between the servo body and transmission case. Push the shift control valve and lower operating lever inward to align the lower lever with opening in the transmission case and as the assembly is lifted from the case reach under to hold the anchor piston to prevent it from falling out and getting damaged, as in Fig. 6.

Caution: Do not grasp the slotted end of shift control valve because the sharp edges may cut the hand. Remove the gasket and check for

(Continued on page 102)

FRAM "See your dealer" Campaign

Sends buyers to you for *Complete* ENGINE PROTECTION

FRAM GIVES YOU OPERATOR 25 DIRECTORY SERVICE . . .

Have your name listed! Powerful Fram ads urge millions of motorists to call Western Union by number and ask for Operator 25 to get the name of their nearest Fram Dealer. That's you if you sign up now!



SALES-MAKING MERCHANDISING CAMPAIGN . . .

New, better-than-ever Fram merchandising campaign helps you sell more. Posters, banners, displays, merchandisers, booklets, uniforms and more. Get the whole story from your jobber.

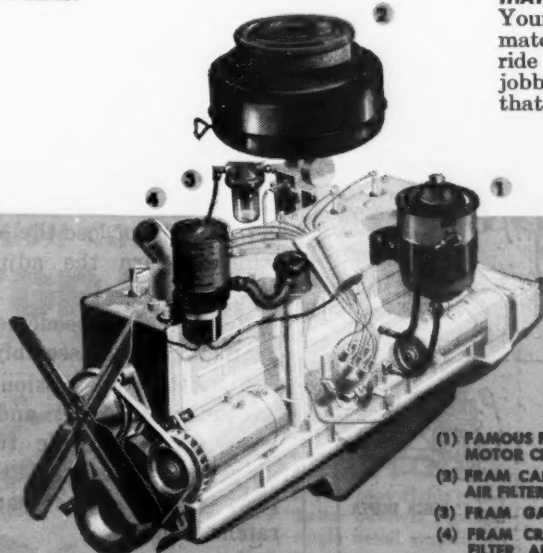


BATTERY OF POWERFUL MAGAZINE ADS . . . Spreads and Pages month after month in Saturday Evening Post, Collier's, Popular Science sell Complete Engine Protection. They tell motorists to call Operator 25 for your name when you're a Fram Dealer.

GIANT BILLBOARDS . . . on arterial highways in every state across the nation remind motorists of Operator 25 and Complete Engine Protection. Cash in . . . Display Fram.



THAT'S ONLY THE BEGINNING! It's the Fram "See Your Dealer" campaign that sells hard with unmatched scientific advertising. Cash in now and ride the profit highway with Fram. See your jobber and get started with the 1950 campaign that puts you out front!



- (1) FAMOUS FRAM OIL & MOTOR CLEANER
- (2) FRAM CARBURETOR AIR FILTER
- (3) FRAM GASOLINE FILTER
- (4) FRAM CRANKCASE AIR FILTER AND POSITIVE CRANKCASE VENTILATOR

FRAM CORPORATION, Providence 16, R. I. • Canada J. C. Adams Co., Ltd., Toronto, Ontario.

For Complete Engine Protection

FRAM



OIL - AIR - FUEL

FILTERS

indication of oil leakage.

Remove the reverse hand operating strut by extending a finger through the adjustment hole to prevent the strut from falling into the transmission case. Then release the strut by raising the operating lever, as in Fig. 7.

Removing Reaction Shaft Flange, Front Oil Pump and Accumulator Assembly.

Note: The converter and bell housing and oil pan must be removed. Valve and servo body assembly need not be removed.

Loosen, but do not remove, both accumulator body caps.

Remove the three bolts which attach each accumulator body, but do not remove the stud nut.

Remove the bolts extending through front oil pump cover but

do not remove any stud nuts. First jobs had one screw and two stud nuts—later jobs have two screws and one stud nut.

Tap very lightly on the rear of the accumulator bodies with a fiber mallet to loosen the reaction shaft flange, then remove the assembly and gasket. Leave the input shaft in place in transmission.

Check the reaction flange gasket for good imprint and freedom from damage which would cause an oil leak at this point.

Removal of Input Shaft, Clutch and Low Band.

Note: The converter and bell housing, valve and servo body assembly and reaction shaft flange assembly must be removed.

Pull the input shaft and clutch hub front thrust washer from the clutch assembly. Then remove the clutch assembly, as in Fig. 8.

Block the low band anchor lever down with a screwdriver and compress the low band with the operating lever while applying the band installing clip J 2595 across the strut flanges of the band. Release the lever and remove low band. Then remove the struts which will drop into case, as in Fig. 9.

Remove the low band anchor and operating levers by threading a 1/4 in.-20 cap screw into each lever shaft and pulling the shaft out of case. See Fig. 10.

Removal of Torque Ball and Universal Joint.

Note: None of the preceding operations are required for removal of torque ball and universal joint.

Remove the torque ball rubber foot.

Remove the attaching bolts, then remove the mounting thrust plate and gasket, torque ball and inner and outer retainers, and all paper shims. Do not lose the paper shims which govern the adjustment of torque ball.

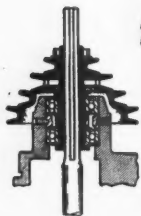
Remove the speedometer driven gear and sleeve assembly.

Place the transmission shift lever on the cross shaft and push the lever forward while turning the universal joint until the locking pawl engages the parking lock ratchet wheel.

Remove the universal joint bolt, lockwasher and flat washer, using

(Continued on page 104)

SOUTH BEND 14" Drill Press for Better Drilling

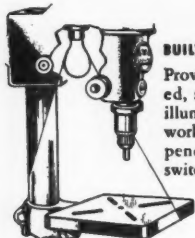


FREE-FLOATING SPINDLE

Design prevents misalignment, side thrust and whip. Precision splines in spindle and sleeve.

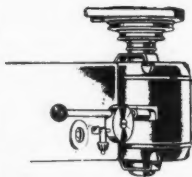
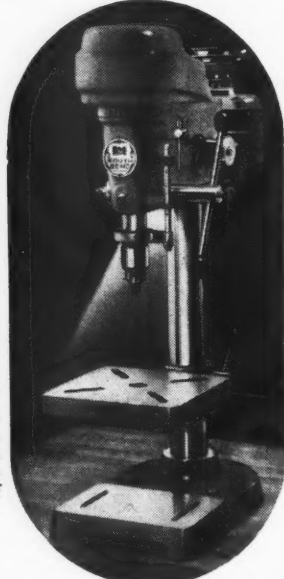
ADJUSTABLE QUILL RETURN SPRING

Retracts quill instantly upon release of feed lever. Tension of spring adjustable.



BUILT-IN LIGHT

Provides shielded, shadowless illumination on work area. Independent on-off switch is built-in.

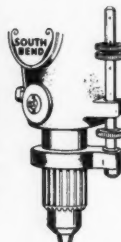


BELT TENSION RELEASE

Flip of lever removes tension from belt for easy speed changes. Proper belt tension maintained.

QUILL BEARING ADJUSTMENT

Shoe-type take-up provides feather-touch tension and secure locking. Quill bearing is NOT split.



DEPTH GAUGE

Controls feed depth, length of return stroke, or locks spindle in any position. 16th graduations.

FOUR PRECISION BALL BEARINGS

Two on spindle, two on drive sleeve. Pre-lubricated and sealed precision type, no oiling required.

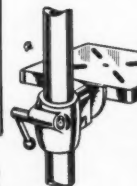
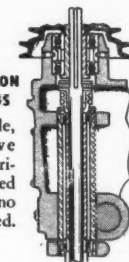


TABLE LOCK

Double-plug binder securely locks table to column. Eliminates misalignment. Column bearing is NOT split.

CAPACITIES - SPECIFICATIONS

CAPACITY

1/2" drill in iron or steel. Drills to center of 14-1/2" circle.

CHUCK

Capacity - 0 to 1/2"

SPINDLE

Drill chuck type supplied, 4" travel.

CHUCK TO BASE DISTANCE

Bench Model - 17"

Floor Model - 46-1/2"

SPINDLE SPEEDS

Four - 655 to 4530 r. p. m.

TABLE SIZE

10" x 10". Tilts to any angle.

Bench Model

\$129³⁰

Floor Model

\$144³⁰

Prices, f. o. b. factory with chuck, 1/2 h.p. motor, switch.



Building Better Tools Since 1906

SOUTH BEND LATHE
SOUTH BEND, INDIANA

Send information on—

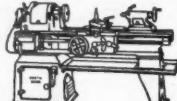
☐ 14" DRILL PRESSES

☐ LATHE TOOLS AND ATTACHMENTS

☐ TIME PAYMENT PLAN



☐ BENCH LATHES
9" and 10"



☐ PRECISION LATHES
10", 13", 14 1/2", 18", 18 1/2", 24"



☐ 7" BENCH SHAPER

Name _____

Street _____

City _____

Zone _____

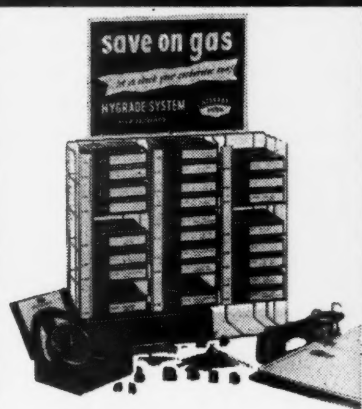
State _____

IT'S SO EASY TO REBUILD CARBURETORS

with the revolutionary new

HYGRADE *Fingertip System*

AND THE PROFIT ON ONLY 9 JOBS PAYS BACK YOUR ENTIRE INVESTMENT



\$69⁷⁵

COMPLETE

Includes the priceless Hygrade Manual; assortment of 20 kits to repair all Chevy, Plymouth, Ford carburetors; all the tools and equipment you need; cabinet; a continuing bulletin service; metal signs, outdoor banner, etc. (This outfit is easily worth \$100.00.)

Thanks to the newly developed Hygrade Fingertip System, you can now operate your own carburetor rebuilding department and earn \$400 or more extra per year—with only one hour's work a week (1 carburetor job).

HERE'S HOW THE HYGRADE SYSTEM MAKES YOU AN EXPERT REBUILDER IN ONE WEEK'S TIME:



**NOT JUST A
NEW MANUAL,
BUT A COMPLETELY
NEW SYSTEM!**

Shows you how to put your finger on the trouble spot in a matter of seconds. How to repair without disassembling more than you absolutely have to. These

clear, step-by-step instructions, arranged in sequence of assembly, tie in with the large exploded-view drawings and photos. The location of parts on these pictures is so easy that parts practically fall into place by themselves.

ASSEMBLIES PACKED IN SEPARATE ENVELOPES

All the parts for each assembly are packed and labeled in separate envelopes to match the new system. You work right along with the manual—envelope by envelope. As you finish each assembly, you automatically use up all the parts in that particular envelope. You can't go wrong!

- By selling labor instead of buying it on the outside, your profit on the average \$10.50 rebuilding job is eight dollars.
- At this rate, you make back your entire investment from the profit on only nine rebuilt carburetors—and you still have all the tools and equipment, the manual, and more than half the kits!
- You can turn every minute of your spare time into cash. In fact, in the time it usually takes for the round trip to pick up an exchange carburetor, you can rebuild it yourself.
- You insure your reputation, by making sure your customer's carburetor has been completely rebuilt with brand new parts.

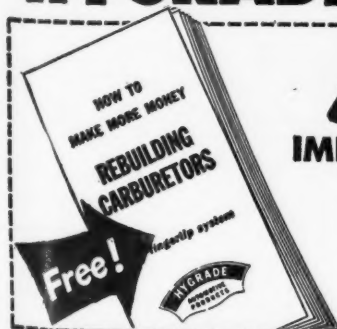
ATTENTION: MECHANICS WHO ARE ALREADY REBUILDING CARBURETORS

Did you know that you can rebuild a carburetor in 25% less time by using the new Hygrade Fingertip System? Clip the coupon; we'll tell you how.

RUSH COUPON TO:

"HYGRADE" 35-31 Thirty-fifth Street
Long Island City 1, N. Y.

By the makers of
Blue Streak Ignition Products



FREE!
IMPORTANT BOOK!

Send for your copy of this valuable "better business" guide. Every single detail explained. Mail the coupon on a penny post card today. It's a 1c investment that can pay you thousands of dollars in dividends.

HYGRADE PRODUCTS DIVISION, STANDARD MOTOR PRODUCTS, INC.
35-31 Thirty-fifth Street, Long Island City 1, New York

GENTLEMEN: Rush me your Free booklet, *without obligation.*

FIRM NAME.....MY NAME.....

ADDRESS

CITY.....ZONE.....STATE.....

MY JOBBER IS:.....

PASTE ON PENNY POST CARD

Buick Dynaflo . . . Continued from page 102

a $\frac{3}{4}$ in. socket wrench and extension.

Pull the universal joint from the output shaft, using the Universal Joint Puller J 682-A (Ser. 40-50), or J 859-A (Ser. 70) if the joint cannot be removed by hand.

Remove transmission shift lever.

Removing the Rear Bearing Retainer and Parking Lock Ratchet Wheel.

Note: Only the torque ball and universal joint and oil pan need be removed.

Disconnect the valve operating rod, as in Fig. 5.

Remove the universal joint retaining ring from the output shaft, as shown in Fig. 11. Avoid nicking the output shaft during removal of retainer as nicks will damage the rear bearing retainer

bushing. Remove retaining bolts, then remove rear bearing retainer and gasket.

Remove the ratchet wheel outer retaining ring, slide wheel from output shaft, and take out inner retaining ring. See Fig. 12.

Removing Rear Oil Pump and Lubrication Oil Pressure Regulator Valve.

Note: Rear bearing retainer must be removed.

Remove the retaining bolts and pump body, which contains the pump gears. In transmissions below A-36,000 the pump assembly consisted of a separate cover, gasket, and body and gear assembly. See Fig. 13.

Remove the drive key, then use the pointed tool to remove the rubber cushion which is located under drive key in the output shaft.

Remove the rear pump plate and gasket if they can be separated from the case without prying. If the plate is stuck, it can be tapped out after removal of the planetary gear set.

Remove the lubrication oil pressure regulator valve seat from transmission case, using a modified drag link socket. Remove valve and spring. See Fig. 14.

Removing Planetary Gear Set, Reverse Ring Gear and Reverse Band.

Note: All of the preceding operations must be performed before removal of planetary gear set.

Take out planetary gear set through front of case.

Remove the reverse ring gear, also the two planet carrier thrust washers if these did not come out with planetary gear set.

If the rear oil pump plate and gasket were not previously removed, tap them out with hammer handle from front side of case.

Thread a $\frac{1}{4}$ in.-20 bolt into the reverse band anchor shaft to pull it from transmission case then remove operating lever. See Fig. 15.

Rotate the reverse band toward the adjusting hole until the anchor can be disengaged, then remove this part.

Compress the ends of the reverse band and apply the band installing clip J 2595 across the strut flanges. Then remove band.

Remove the reverse ring gear rear thrust washer from case.

Try this
RUGER
Hydraulic
Floor Crane
for
Ten Days
Free



For undercoating, brake and muffler work, store room stacking and every other handling problem in your shop.

Fill out the coupon below. Mail it to us attached to your letterhead. We'll contact our distributor in your territory and arrange with him to furnish you a genuine Ruger Hydraulic Floor Crane for a ten day free trial in your own shop. There are no strings attached . . . no obligation to buy. If, at the end of the ten-day free trial, you believe that you can get along without the Ruger, it will be removed at no cost to you.

Remember, this is the genuine Ruger, the original Hydraulic Floor Crane that eliminates back-breaking heavy lifting and saves time and money in thousands of shops from coast to coast. Perhaps

you may have wondered whether the Ruger could do as much for you. Here is your chance to find out without spending any money or obligating yourself in any way.

Mail coupon today as we must reserve the right to withdraw this free trial offer at any time and without prior notice.

Attach this coupon to your letterhead

Please arrange for us a ten-day free trial of a Ruger Hydraulic Floor Crane. We understand that this request does not obligate us in any way.

Your Name _____

Company _____

Street Address _____

City _____ Zone _____ State _____

RUGER Equipment Co., Inc.



Load Lifting and Handling Devices

623 West Fourth Street • Uhrichsville, Ohio

*Right...
for replacement
on all cars -*

HARRISON RADIATORS

The Harrison radiator line represents one of the biggest opportunities in automotive service!

Harrison radiators are original equipment on all GM cars. Chevrolet, Pontiac, Oldsmobile, Buick, Cadillac . . . all have Harrison radiators as original equipment . . . all offer *you* a tremendous pre-sold replacement market. Then, too, Harrison cores meet the replacement requirements of *all* cars and most trucks.

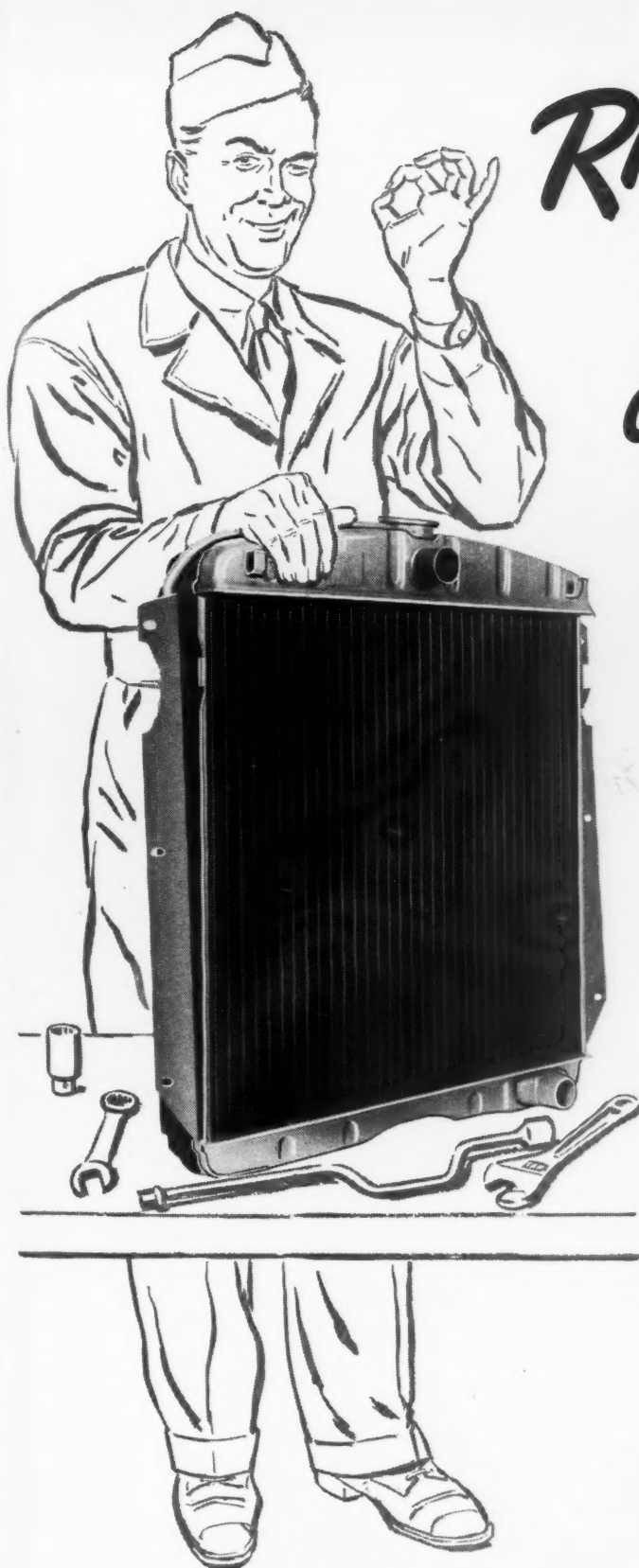
Don't miss this opportunity for profits in the automotive cooling part of your business! The Harrison radiator line meets a large and continuous demand . . . serves a large and profitable market.

Twenty United Motors branch warehouses, spread throughout the country, serve United Motors Distributors everywhere . . . assure you of speedy delivery.

For complete information, call your nearest United Motors Distributor, or write direct: United Motors Service, General Motors Building, Detroit 2, Michigan.

HARRISON

HARRISON RADIATOR DIVISION
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

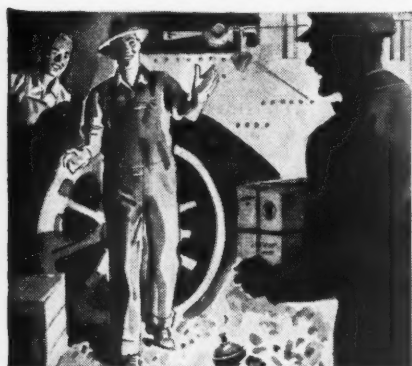


HARRISON RADIATORS—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Contractor saves penalty of \$500 — by investing \$3.84 in Air Express



Time clause in housing project paving contract stood good chance of being invoked when equipment broke down at 5 P.M. So 10-lb. carton of replacement parts was Air Expressed from 1200 miles away. Delivered in just 8 hours. The Air Express charge was only \$3.84—and contractor completed job on time.



\$3.84 is small indeed, since it covers door-to-door service. Anytime delivery, 7 days a week. Makes the world's fastest shipping service the most convenient.



Air Express goes by Scheduled Airlines; extra dependability, *experienced* handling. Shipments keep moving. Regular use keeps any business moving.

Only Air Express gives you all these advantages

World's fastest shipping service.

Special door-to-door service at no extra cost.

One-carrier responsibility all the way.

1150 cities served direct by air; air-rail to 22,000 off-airline offices.

Experienced Air Express has handled over 25 million shipments.

Because of these advantages, regular use of Air Express pays. It's your best air shipping buy. For fastest shipping action, phone Air Express Division, Railway Express Agency. (Many low commodity rates in effect. Investigate.)

AIR EXPRESS

GETS THERE FIRST



Rates include pick-up and delivery door to door in all principal towns and cities

A service of
Railway Express Agency and the

SCHEDULED AIRLINES of the U.S.



Price Your Jobs

Continued from page 51

overhead and the desired net profit. Say that Miller figures labor and materials at \$75. This \$75 cost of sales is 60 per cent of sales, according to the prior tabulation, and so, divide 60 into \$75 to get one per cent, or \$1.25, then multiply \$1.25 by 100 to get the sales figure, \$125, which is always 100 per cent. This is how Miller would arrive at the selling price of this job:

	%
Selling price of job	\$125.00—100
Cost of job—labor and materials	75.00— 60
Margin of profit on job..	\$50.00— 40
Overhead chargeable to job	37.50— 30
Net profit on job	\$12.50— 10

Most automotive businessmen will find that their overhead strikes a norm in time that averages up about the same from period to period unless they undertake a program of expansion, and so, they cannot afford to use the wrong pricing or costing formula because there is little chance that they can make up for any resulting loss by reducing their overhead expense. If Miller had figured this job on the basis of a mark-up on cost formula, using the ratios taken from his books and listed on the profit and loss statement as a percentage of sales he would have lost money on this job:

Cost of job—labor and materials	\$75.00
Add 30 per cent overhead expense	22.50
	\$97.50
Add net profit—10 per cent of cost	7.50
Selling price of job	\$105.00
Selling price when figured with margin on sales formula	125.00
Miller short-changes himself	\$20.00
Net profit on job when figured with the margin on sales formula	12.50
Miller is out of pocket	\$7.50

GREAT NEWS for you who sell

Howard Zink

SEAT COVERS



WATCH FOR OUR
ADS IN THE
SATURDAY EVENING
Post

Beginning with the February
18 issue, out February 15.

WATCH FOR
OUR ADS IN
HOLIDAY

Beginning with the March
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PLASTIC FABRICS

Beautiful colors in both
bold and neat patterns
are available in Lumite
woven from saran.

RAYON CLOTHS

Their lustrous satin-like
beauty is offered in three
most wanted solid colors:
maroon, blue and green.

**PLASTIC COATED
FIBRE FABRICS**

Such famous materials as
Supertine Textilene Sun-
sure are available in
various colorful patterns.

How do you like that? Now you have the most wanted seat covers in America being made even more popular by the terrific power of full color, half-page advertisements in **THE SATURDAY EVENING POST** and **HOLIDAY**. It means you'll sell more Howard Zink seat covers than you ever did—and already you and thousands of other dealers are selling more Howard Zink seat covers than any other make in the land.

Want to know more about the wonderful Howard Zink 1950 line? Want details of the Howard Zink 1950 program for dealers? Just write us!

Howard Zink

THE HOWARD ZINK CORPORATION

FREMONT, OHIO

Passaic, N. J. • Long Beach, Calif. • Charleston, Miss.

World's largest manufacturer of auto seat covers

BRAND NEW!

Rochester

THE CARBURETOR WITH

9,000,000 PROSPECTS

**NOW
USED ON THE
1950
CHEVROLET**

**FOR ALL
CHEVROLETS
SINCE 1932**

Imagine that, 9,000,000 prospects. They are yours with this new Rochester Products carburetor. It fits every Chevrolet car or truck built in the last 17 years, and more than nine million of these cars and trucks are on the road today. That's a ready-made market for fair.

And you have a sure-fire selling point when you point out that this carburetor is original equipment on the 1950 Chevrolet... is similar in principle to the Rochester carburetor used on the Oldsmobile 88 and 98 for 1949 and 1950. Look at the outstanding features that led Chevrolet and Oldsmobile to adopt the Rochester carburetor.

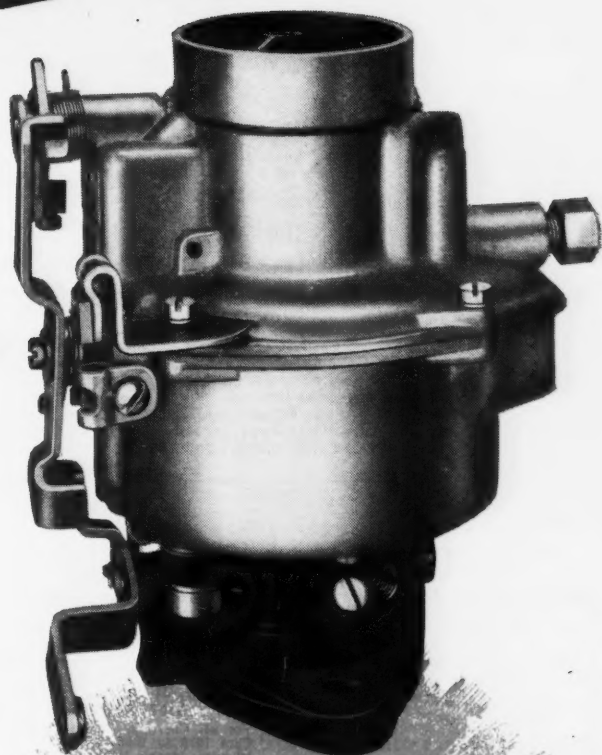
This market is waiting for you. Call your United Motors distributor today. Ask him about the power-packed merchandising program—signs, banners, decals, mats, etc.—to help you sell *the carburetor with 9,000,000 prospects*.



ROCHESTER CARBURETORS—A UNITED MOTORS LINE
Available everywhere through
UNITED MOTORS DISTRIBUTORS

Products Carburetor

- NO FUEL LOSS ON ANY INCLINE
- SMOOTH ACCELERATION WHILE TURNING
- EASY STARTING IN HOT WEATHER
- CONTINUOUS FUEL FLOW
- POWER MIXTURE READILY AVAILABLE
- ACCELERATION HOT OR COLD
- 40% FEWER PARTS TO SERVICE
- ALL METERING PARTS IN COVER
- PERMANENT IDLE TUBE
- NO WEAR AT JET ORIFICE



DISTRIBUTED BY
**UNITED MOTORS
SERVICE**



ROCHESTER PRODUCTS
DIVISION OF GENERAL MOTORS, ROCHESTER, NEW YORK

put the distributor assembly back in and connected the wires in record speed.

"Done already!" exclaimed the girl. "My goodness, that can't be all that was wrong!"

"Yes it is," said Larry, and breathed a fervent A-men.

"That's what you said the last time," Nancy said, flipping the end of her scarf back into place.

"This time I'm right," Larry declared. "You'll see."

"Want to bet," said the girl looking at him from the corner of her eyes.

"What? Oh, bet," said Larry. "I never take a lady's money." He stepped on the starter. The motor started but soon sputtered and popped again."

"My goodness. Still won't run!"

The girl looked at Larry blankly, waiting for him to say something. He did. "Look, lady. Beat it. Scram. Leave me alone. Let me think. I ain't even been able to hear the thing run, you talk so much . . . Or get off those silly sticks and come down here an' fix it yourself."

"My goodness," said Nancy giggling. "Do you mean I could make a big strong man like you get mad." "Besides," she added smugly, "I do better on my silly sticks than you do on your old engine."

And this is where Larry made his big mistake.

"Any lame brain could slide down hill on those barrel staves," he stated. And the girl, no longer a giggling tease, blazed back.

"If you think it's so easy let's see you do it then."

"If I had some skis I would," retorted Larry.

"Take my father's off the ski rack. You adjust the bindings to your clod-hoppers with your screw-driver—That is if you can use a screw-driver."

Shortly Larry stood beside the girl at the top of the long, long hill.

As he looked down the slope it became steeper and steeper and steeper. Larry seemed to be standing on top of a billboard poised to slide down its face.

"Ready," said Nancy, grinning at Larry's tense face.

Larry's eyes were still glued to that long, long hill.

"I shouldn't be playin'—not on the boss's time," he said firmly. "Back to work for me." And he bent down to loosen the bindings. One foot slipped forward a little. Naturally the other followed it. Larry was on his way.

His stomach banged his tonsils then went back where it belonged. The wind whistled in his ears and his eyes watered. He started to fall over on his left side, then his right, then he steadied out. "Not bad," he thought. "This is a cinch." Then he saw the tree. It was right in front of him. . . .

Pop O'Neill hung the phone back on the hook and shook his head. "Tommy," he said. "Can you go up to MacLaren's? Our mechanic has hit a tree."

(Continued on page 112)



National PARTS CREATE MORE Repair Business for YOU!

- They Can Be Sold When A Major Repair Can't Be
- Can Be Installed Before Major Repairs Are Needed
- Fast, Easy Installations — You Can Handle More Jobs

You can multiply your profits by installing National Parts & Assemblies, because they create more repair business. Unique features of National Parts prevent the need for major repairs. The low-cost, preventive repairs that are possible with National Parts can be sold easily at the first sign of lubricant leakage, noise and vibration around the "U" joint, ball housing and ball seat.

Because National Parts & Assemblies can be installed without tearing down the differential and because they save the cost of expensive replacement parts, major repairs can be sold when they might otherwise be put off indefinitely. Quicker repairs with National Parts enable you to restore your customers' cars and trucks to their original, splendid operating condition at lower cost.

Saves Buying a
New Drive Shaft

Repairs Worn Drive
Shaft & Seal

CAN BE INSTALLED
IN ONE HOUR
Without Tearing
Down Differential

Pat. No. 2,403,520



DRIVE SHAFT BUSHING & SEAL ASSEMBLIES

Assembly drives over shaft with end of housing. New front bushing in assembly fits over the "U" joint. Sell with every transmission and "U" joint repair job.

- Provides Greater Bearing Surface.
- Eliminates Oil Leaks from Transmission.
- Prevents Dilution of Differential Lubricant, Due to Trans. Oil Leak.
- Stops Excessive Vibration and Whipping in Drive Shaft caused by Loose Bearing.
- Enables Repair to be made without Replacing Drive Shaft.

NOW 6 DIFFERENT BUSHINGS TO FIT ALL MODELS
For all Chevrolet Cars and Pickups, 1930 to 1949; Pontiac Cars 1933 to 1936; GMC 1934-36 Pickups; and most GMC Pickups, Models 1939 to 1948.



Pat. No. 2,405,541

DRIVE SHAFT HOUSING
REPAIR UNIT K-400

Saves Buying New Drive Shaft Housing. Repairs worn drive shaft housing. Prevents damage to drive shaft, "U" joint, etc., caused by wear. For Chev. Cars & Pick-Ups; Most GMC Pick-Ups.



"UNIVERSAL"
TRANSMISSION
CASE BALL
SEAT

Saves Cost of a New Transmission Case Assembly. Keeps ball housing in line with drive shaft housing. Chev. Master '29-'49 Cars; Pontiac, '33-'36; Chev. '29-'49 1/2 and 3/4 Ton Pick-Ups; Most GMC Pick-Ups.



UNIVERSAL JOINT
BALL HOUSING KITS

Accurately machined inside and out. Repairs Worn Drive Shaft Housing. Stops excessive wear & vibration between drive shaft housing, ball housing & trans. case. Most Chev. Cars & Trucks, '29-'49. Most GMC Pick-Ups; Pont., '33-'36.

Sold Nationally by Leading
Automotive Wholesalers.

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Please send me complete information about the National Line.

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NATIONAL MACHINE WORKS, INC.

P. O. BOX 4305

AUTOMOTIVE PARTS MANUFACTURERS

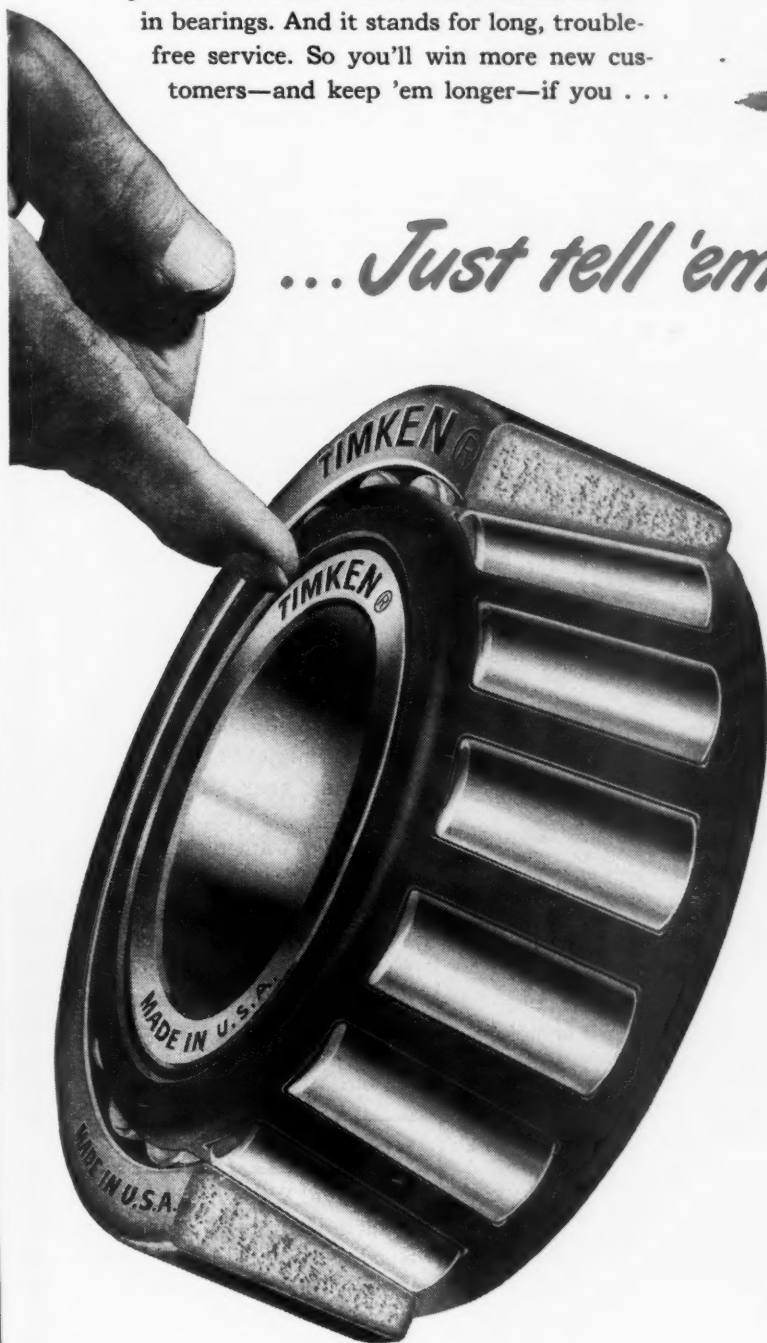
OKLAHOMA CITY 9, OKLA.

How to win new customers and keep the old ones, too

NEW or old, *all* customers are anxious to get the most for their money. So let them *know* your workmanship and replacement parts are the best. When you replace bearings, point out the trade-mark "Timken®" on the tapered roller bearings you use. "Timken" is the best-known name in bearings. And it stands for long, trouble-free service. So you'll win more new customers—and keep 'em longer—if you . . .



... Just tell 'em it's "TIMKEN"®





Timken bearings are first choice for most leading makes of automobiles, trucks, busses and tractors.

Timken tapered roller bearings carry the toughest loads—radial, thrust and combination. They minimize friction. Keep parts in alignment. Reduce wear. And normally outlast the car itself. They're made of Timken fine alloy steel and manufactured with extreme precision.

Take a tip from the auto makers. Make sure the trade-mark "Timken" is on every tapered roller bearing you use. **SEND FOR FREE BOOKLET: *Timken Tapered Roller Bearings, Their Care and Maintenance*.** Contains 20 pages of practical information for mechanics, garage men and fleet operators. Write Dept. AM2, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN
TRADE MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

"Is he all right?" asked Tommy. "Tow car damaged bad?"

"The tow car is unscratched," Pop commented sadly. "Larry hit the tree with his head. . . . He was showin' young Nancy Appleton that he knew how to ski. Incidentally, you can bring her car back with you. He didn't get it fixed."

Larry was in the lodge when Tommy reached the slope. Nancy,

contrite, was close beside him but the crowd had dispersed. Larry's battered nose was red and both eyes were black and blue.

"How do you feel?" asked Tommy.

Larry merely looked at him. "Never mind," said Tommy. "Let me guess."

The three of them walked slowly out toward the tow car and the

Hudson. Tommy began to climb into the tow car.

"What're you doin'?" asked Larry in a monotone.

"I'll have to tow it back to the shop," said Tommy.

"Nuts," said Larry. "All you'll have to do is disconnect the solenoid wire at the coil and it'll run."

The girl and Tommy looked at Larry in surprise. "When did you figure that out?" asked Nancy.

"You won't believe me," he shook his head, then winced. "It came to me in a flash just before I hit that damn tree."

Tommy disconnected the wire and sure enough the car purred like a tom cat on a feather bed.

"I don't get it," he said. "But you're right."

"My goodness," said Nancy, turning her big eyes full on Larry's face, close range. "You're really smart. How did you ever know that?"

For a few minutes Larry forgot his painful puss. "Aw, it's simple," he said. "Hudson's got a solenoid which controls the interrupter switch which grounds the primary circuit when making shifts out of overdrive. If these contact points become stuck together they act just like a bad coil."

Tommy listened attentively, but Nancy asked the first question.

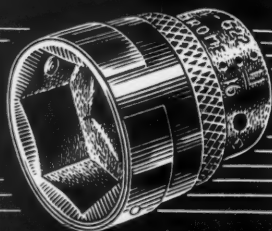
"Do you mean to say you knew all that an' made me wait here while you diddled with all those other gimmicks? An' then you go and bang your silly old head into a defenseless tree, and all the time me really wanting to get home to get ready for a date. Why. . . ."

Larry shook his aching head at Tommy while the flood of words poured on. "That shows you the only reason Adam was made first," he said. "Just to give him a chance to say a few words."

**NOW...
a socket that
GRIPS
and HOLDS**



**Herbrand's new
HOLD-IT[®] socket**



**holds nuts, plugs, etc.
to prevent dropping and
losing in removing**

Herbrand's new Tool-of-the-Month is the trick of the year for time and trouble saving removal of slippery nuts, plugs, etc. HOLD-IT Sockets are especially good for removing drain plugs on Hudson and Chrysler where plugs fall into the inaccessible lower pan. But they're handy on any job — when hands are greasy, when working in close quarters, etc.

HOLD-IT Sockets have two spring-tension pins in socket wall for firm grasp. Nuts remove easily from socket with hand pressure when free of job. You'll find HOLD-IT Sockets handy for many applications . . . for added safety and greater convenience.

See your Herbrand distributor, or write us for complete details.

JC-624 — $\frac{3}{4}$ " , 6 pt. \$1.25 Fits Chrysler

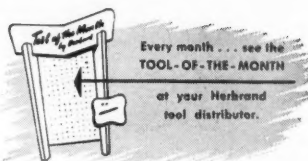
JH-622 — $\frac{11}{16}$ " , 6 pt. \$1.25 Fits Hudson

Herbrand

DIVISION OF

THE BINGHAM-HERBRAND CORPORATION, FREMONT 7, OHIO

*Trade Mark of the Herbrand Division. Patent applied for.



Herbrand makes a complete line of hand tools, kits and cabinets for all automotive service work.



George Wadell

George Wadell, founder of the Wadell Equipment Company, Garwood, N. J., makers of brake drum lathes and other equipment, passed away, Dec. 17, 1949. At 43 years of age, Mr. Wadell had spent his entire business life in the automotive industry.



Profit Faster with Much Less Work Painting Cars the M-S Way!

Paint more cars faster the profit-boosting way with ready-mixed Martin-Senour finishes. Every job is *right* the first time because M-S finishes are factory-matched to the car-maker's specifications, then factory-packaged for positive color control! Simply check the car's color, make and model in your M-S catalog. Then order from your N.A.P.A. jobber.

Only M-S Hi-Solids Lacquers and Synthol Enamels Give You All 8!

1. Higher painting profits!
2. Exact color match to car-maker's specifications!
3. Top quality, top durability, top beauty!
4. No time wasted mixing or matching!
5. Patented pour-top can prevents waste!
6. No come-backs, no headaches!
7. Easier to handle . . . jobs out on time!
8. Available everywhere! Call your N.A.P.A. jobber!



SPECIAL PROFIT PACKAGE!

M-S "Ultra Jet" black lacquer

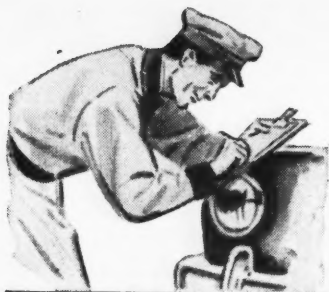
Top-quality jet black lacquer for all-over or spot-repair jobs. Unusual building and covering qualities save time and money on every job. Dries with fine natural lustre. Compounds easily to high polished surface. Ask for M-S No. 6069.

MARTIN - SENOUR

2520 South Quarry Street, Chicago 8, Illinois

Factory Packaging

is the only Positive Control from Factory to Finisher



CHECK UP



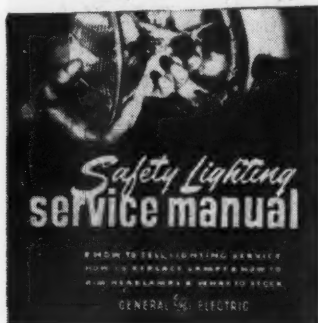
Ad campaign includes 2-page spread in Mar. 18 Saturday Evening Post . . .



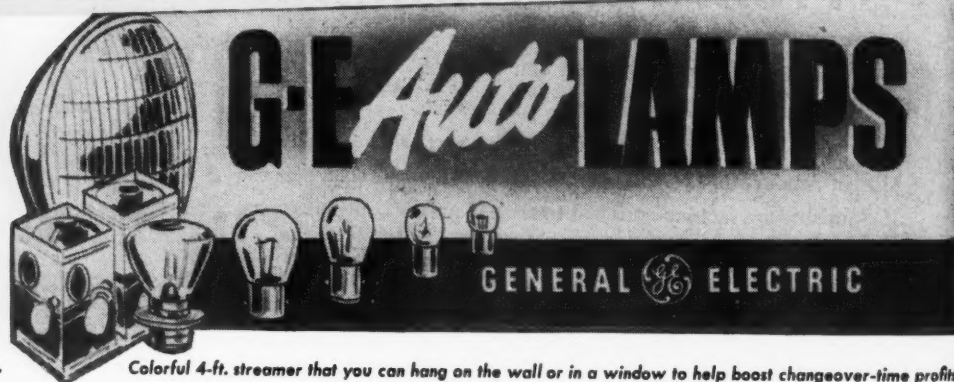
. . . full page in Collier's Apr. 29 . . . half page, Collier's Mar. 11.



CHECK THE LIGHTS OF EVERY CAR LEFT FOR CH
OUT OF EVERY 6*! DEALERS' PROFITS LAST YE



New Manual—32 pages, 170 illustrations.

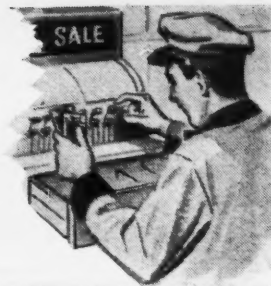


Colorful 4-ft. streamer that you can hang on the wall or in a window to help boost changeover-time profits.

THIS YEAR'S PROMOTION IS BACKED BY THE STRONGEST ADV
STOCK UP... TIE IN... GET STARTED NOW!

* Survey by Police Chiefs' Association reveals that one car out of every six needs essential lamps.

'N RING UP!



LAMP PROMOTION STARTS MARCH 1ST!



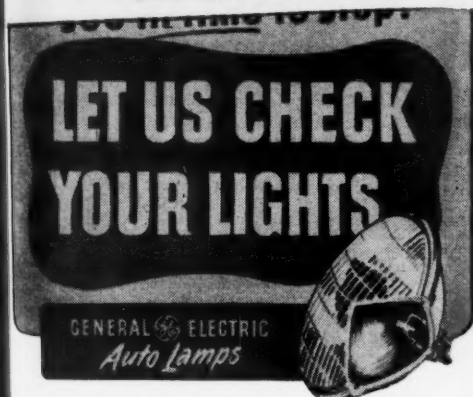
New Lamp Guide lists right G-E lamps for every socket . . . for every car. It's handy, easy to use.



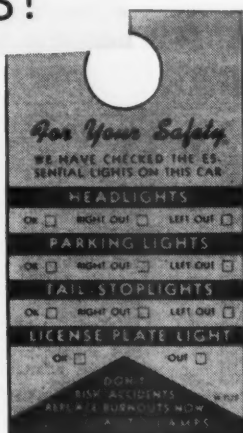
Lampholder puts "sell" in windows, counters.

CHANGE OVER! RING UP EXTRA SALES ON 1 CAR

YEAR PROVE IT PAYS!



Big, action-getting poster for inside or out.



Handy, Snap-on Memo Card.



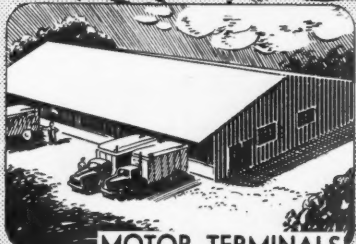
Aiming Screen and Sign. Screen—\$2.50 (other sales aids free).

ADVERTISING AND SALES HELPS EVER.

To get your Spring Auto Lamp Promotion Package, with all the sales aids shown here, call your G-E Lamp supplier.

GENERAL  ELECTRIC

*If You're
Planning
To Build...*



MOTOR TERMINALS



GAS STATIONS

*You Can Slash Costs
WITH*

Steeline

"PACKAGED"
ROOF SYSTEMS
and
BUILDINGS

Cut construction costs, save time by using a "packaged" Steeline pitch or flat roof system or a standard design all-steel building. All are delivered to you complete and ready for erection.

Pitch and flat roof systems are furnished complete from the eave line up. No columns are required in the side walls. Steeline roof systems are easy to insulate and are available in clear spans up to 60 ft.

Standard Steeline all-steel buildings are flexible to enable us to meet most requirements with a standard design. The elimination of custom design and fabrication cost is a substantial saving. Steeline buildings can be insulated either initially or at a later date. For complete information fill in and mail the coupon below.

I am interested in:

.....All Steel Buildings
.....Pitch Roof Systems
.....Flat Roof Systems
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NAME.....

ADDRESS.....

CITY..... STATE.....

CAREW STEEL PRODUCTS CORP.
YORK 4, PENNSYLVANIA

SOLD DIRECT To DEALERS

Fine quality, low cost Auto Carpet Cut Mats. Sponge back: heavy pile: requires no binding: cut to size: individually rolled and wrapped 12 to carton: similar to standard equipment. Distributor territory available.

Also available in rolls

TRENTEX MFG. CO.

1104 Princeton Ave., Trenton, N. J.

Plymouth Overdrive

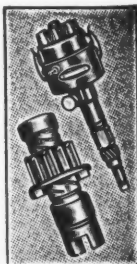
Continued from page 59

contact the ground switch after the throttle valve has opened fully. This prevents bending of the linkage after full throttle position is reached as slightly increased pressure is required to close the ground switch.

Wiring must be made to length for the relay to solenoid and ground switch. The illustration shows this proper hookup on wiring.

A special bracket mounts the control cable assembly to the steering mast jacket. A hole is drilled in the front of the cowl for the control cable, and dash grommet 903-799 and cowl 681349 are used to prevent rattle and to seal out air.

When remounting the transmission in the car, use regular lock washers on the transmission bolts instead of shake proof washers.



THE **VAN** Complete
LINE Rebuilding Service

Mr. Jobber: Stock the VAN line. Best quality, attractive package. SHOCK ABSORBERS, STARTER DRIVES, DISTRIBUTORS, GENERATORS, CARBURETORS, WIPER MOTORS, FUEL PUMPS, BRAKE CYLINDERS.

Mr. Service Man: Insist on VAN quality. Ask your jobber. If he can't supply, order direct, giving his name.

VAN BERGEN & GREENER, INC.

1619 N. Hoyne Ave., Chicago 47, Ill.

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STOPS

SQUEAKS, RATTLES, DUST
and DRAFTS IN OLD or NEW
CARS. 1000 OTHER USES.



THE ORIGINAL SPONGE-
RUBBER STRIP WITH
PATENTED NO-STRETCH
FABRIC BACK.

DURKEE-ATWOOD CO.

★ ★ Minneapolis 13, Minnesota ★ ★

Selling like hotcakes!



THE SENSATIONAL NEW

HERCULES BOX-O-BRACE

Custom Made for All Popular
Makes of 1/2-ton, 3/4-ton, and 1-ton
Trucks.

CHECK THESE FEATURES:

★ **TAKES ALL BOX-SPREAD
PRESSURE**

The "Hercules" Box-O-Brace acts like a vise—holding sides and end gate rigidly in position to prevent spreading or cracking of box regardless of pressure or vibration.

★ **PROTECTS BOX, FENDERS AND
TAIL LIGHT**

The "Hercules" Box-O-Brace acts like a buffer in backing up against obstructions—giving protection for box, end gate, fenders and tail light.

★ **WELDED ALL IN ONE UNIT**

The custom-made, factory-built "Hercules" is made of strong sheet metal formed into channel design and welded into one spread and bend-proof piece that fits right on to truck box.

★ **INTERCHANGEABLE—EASY
TO INSTALL**

The "Hercules" slips onto the truck box like a letter slips into an envelope. The unit comes with all holes bored. Just remove end gate, slip on and bolt to your box. IT REMAINS PERMANENT FOR LIFE OF TRUCK AND CAN BE EASILY REMOVED AND INSTALLED ON NEW TRUCK.

DEALERS WANTED

Get in on this fast selling,
high profit item — NOW!

Manufacturing operations have been expanded to serve wide areas and exclusive dealerships are now open in all U. S. A. territories. Get full particulars by:

WRITE DIRECT TO:

NANCE CO. LTD.

RED DEER CANADA ALBERTA



Right...twice

for **FACTORY COLOR
MATCH...**

for **REPAINT SHOP
REQUIREMENTS!**

NOW AVAILABLE!

S-W Factory-Packaged

**OPEX "OK" LACQUERS
for most popular cars!**

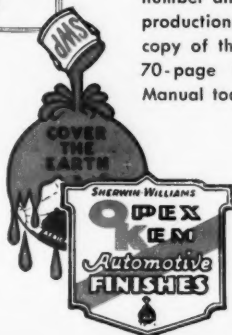
Opex "OK" Lacquers are available in factory-filled patented, pouring-top pint packages for all the most popular late-model cars.

Opex "OK" Lacquers are also available custom-mixed to order in any quantity by Sherwin-Williams "OK" jobbers for both late and earlier models as far back as 1935, through specialized color mixing formulas.



Free **COLOR
CLASSIFICATION MANUAL**

An invaluable cross-index reference for identifying by original car name or factory code number all motor car standard production colors. Ask for your copy of this Sherwin-Williams 70-page Color Classification Manual today.



You can be sure—TWO WAYS—when you pick any Opex "OK" Lacquer color for a refinishing job.

You can be sure it's right for color, because it's not only accurately tinted and matched to motor car production color standards as originally adopted by the motor car manufacturers, but it has also been periodically checked against the actual cars delivered to dealers.

You can be sure it's right for gloss retention and durability, because it has been specifically compounded to meet the requirements of actual repaint shop conditions, which are materially different than the ideal conditions of original factory finished paint jobs with their full control of temperature, humidity and viscosity, under which production line finishes are applied. Opex "OK" Automotive Lacquers are formulated to give best possible results for refinishing without requiring air-conditioning, baking ovens or special high-pressure equipment.

Better refinishing starts with your "OK" automotive jobber. Call him today or write for names of "OK" jobbers nearest you. The Sherwin-Williams Co., Automotive Division, Cleveland 1, O. (Export Sales Division, Newark, N. J.)

SHERWIN-WILLIAMS AUTOMOTIVE FINISHES

SEEMS EVEN CUPID KNOWS I'VE GOT
SOUTHERN FIBER BLOCK



SOUTHERN
FRICTION MATERIALS CO.-CHARLOTTE, N.C.

Time Savers...
KEN TIRE CHANGING **TOOLS**
...they're "Job Designed"

T-70 SET
T-22 T-25 T-21
T-28
T-27
T-18
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T-20
T-19A
T-48
T-50
T-52
T-10
T-26
T-25 New Ford Tire Tool

KEN-TOOLS are hand forged from chrome nickel alloy steel...heat treated for extra long life...Best By Actual Test!!

KEN-TOOL... LARGEST EXCLUSIVE MAKERS OF TIRE AND WHEEL CHANGING TOOLS

See Your Local Jobber for Our Complete Line
The KEN-TOOL Mfg. Co.
Akron 5, Ohio

DREW Ameroid Carburetor and Parts Cleaner

It's New! It's Better!
It brightens and polishes as it cleans!

Automotive Division
E.F. DREW & CO., INC.
15 E. 26th St.
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Offices and Warehouses in principal cities

Speaker Acquires Amacor

The complete Amacor line of automotive rear view mirrors and directional signals has been acquired by the J. W. Speaker Corporation, Milwaukee, Wisconsin. The line was formerly manufactured by the Ajax Manufacturing Corporation, Detroit, Michigan.

The Speaker Corporation has acquired full manufacturing and distribution rights, equipment, and trade mark and patent rights. In the future, the mirrors and directional signals will be marketed under the "Speaker-Amacor" trade name.

ALLOY PISTONS



If they're
HARD TO GET
We've Got 'em!

To Fit Every Car in America

Write for Catalog
TSUNGANI PISTON CO.
625 East 11th St., Tacoma, Wash.

C.T.I. TRAINED MEN ARE AVAILABLE!

Each month C.T.I. graduates ambitious young men who have completed an intensive course in Automotive Mechanics and Body-Fender Repair. Their training has been practical. They've learned by working on modern equipment under personal, expert supervision. If you need a trained man, we invite you to write for an outline of our course, and for a prospectus of the graduate. (No fees, of course.) Address

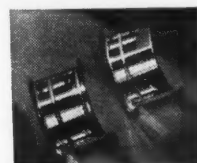
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PUROLATOR

Micronic
**OIL
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Filters *more* abrasives... *faster!*



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Standard equipment in America's leading automobiles for more than 20 years.

DETROIT ALUMINUM & BRASS CORP.
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Genuine
SERVICE
INDIANAPOLIS
"Measurably Better"
SPRINGS

SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

When in DETROIT

—make this "Goodwill Hotel" your headquarters. Centrally located overlooking Grand Circus Park... 500 rooms, each with tub and shower, chairside radio, television. Good food, ample parking space, garage service also available... Home of THE TROPICS, most unusual night spot in Detroit.

HOTEL WOLVERINE

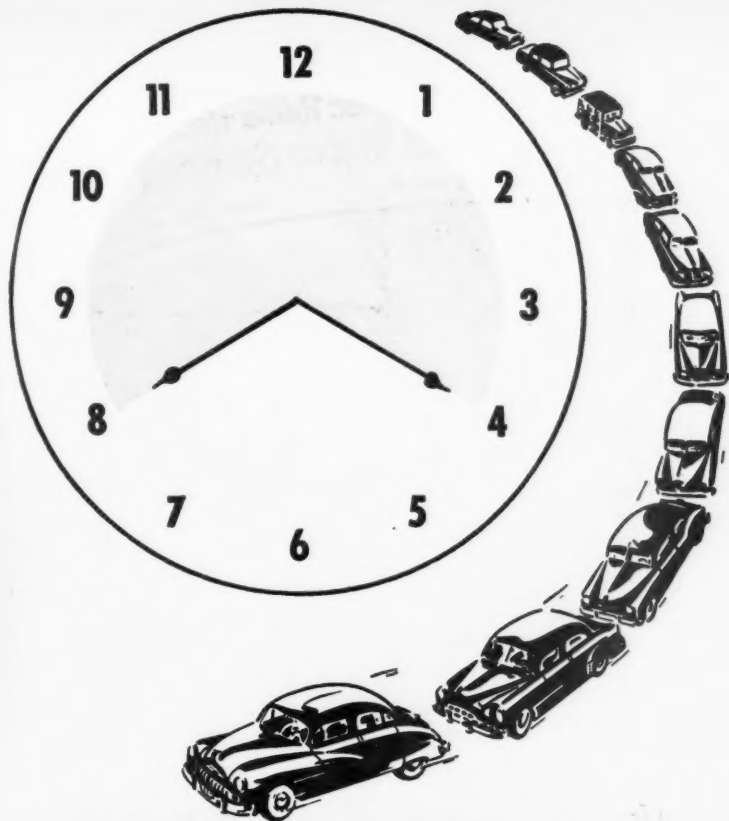
"The Goodwill Hotel"

Elizabeth Street—Block East of Woodward

RATES FROM \$3.00 SINGLE • \$5.00 DOUBLE



CAMPBELL
Lug-Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP
U.S. Pat. No. 2,191,441—Canadian Pat. No. 379,271
CAMPBELL CHAIN Company
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YORK, PENNSYLVANIA



10 CARS
8 IN
HOURS

REFINISHED IN THE DEVILBISS COMPLETE PAINT SHOP AND CONVECTION OVEN

IN the new DeVilbiss Complete Paint Shop with its efficient convection oven, cars can be painted and dried dust-free at the rate of one every 45 minutes.

One-third of today's shop volume results from body and refinishing service. Used car reconditioning boosting this volume to as much as 50%. Therefore, the facilities of a Complete DeVilbiss Paint Shop become a necessity as well as a profit leader. Gear your facilities for high-speed, low-cost, efficient production . . . install a tandem combination DeVilbiss Economy Showroom Booth and Convection Oven.

In the new DeVilbiss Auto Oven, the car is enveloped in a circulating stream of filtered, heated air held to a safe temperature by automatic controls. Every part of the car is dried uniformly . . . no discolored hot-spots, no soft undried areas. And it costs as little as 10 cents to dry a car the DeVilbiss way, depending on fuel rates.

You'll make more money and do better, faster work when you install a DeVilbiss Complete Paint Shop and Oven. Ask your distributor for details. Or write to—

THE DEVILBISS COMPANY, Toledo 1, Ohio
Canadian Plant: WINDSOR, ONTARIO



Write for Free Booklets
that describe the DeVilbiss
Auto Oven, the Economy
Spray Booth and Complete
Paint Shop Outfits.

DEVILBISS *means Quality in all four . .*



**SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS**



Johns-Manville jobbers now have the best there is for dealers

- ✓ Products
- ✓ Promotion
- ✓ Profits

Results of nation-wide survey confirm new business-building features for dealers in expanded J-M Friction Materials line

This new, expanded brake lining program is the answer to a nation-wide survey conducted by Johns-Manville asking hundreds of jobbers what dealers require for 1950!

From this statement on dealers' preferences, Johns-Manville expanded its program to include: important improvements in brake and clutch products; new, attractive, sales-help literature; more local stations added to the largest radio program of any brake lining manufacturer... and many other important, new dealer promotion features.

Among the new items in the line are WireKlad, an *improved* brake lining development with an exclusive, revolutionary new wire reinforcement. Another is the finest looking, better-performing Spiral Wound Clutch Facing, designed especially to make clutch relining easier and more profitable.

It will pay you to write Johns-Manville today, or get in touch with your Johns-Manville distributor. Get the details of this new, bigger and better Johns-Manville friction materials program for 1950... Address Johns-Manville, Box 290, New York 16, N. Y.

"Bill Henry and the News"
Mutual Broadcasting System
8:55 P.M. E.S.T. Mon. thru Fri.



**NEW...
WireKlad linings and
Spiral Wound facings!**

These two important new products star in the expanded Johns-Manville line for 1950! WireKlad is the newest and most revolutionary development in brake lining manufacture and highly stable performance.

Spiral Wound Facings give drivers the amazing new "cushion" clutch action, plus the lowest rate of wear. They have excellent appearance; are easy and economical to install!

Johns-Manville

Asbestos

The FIRST name in asbestos brake linings

FRICION MATERIALS

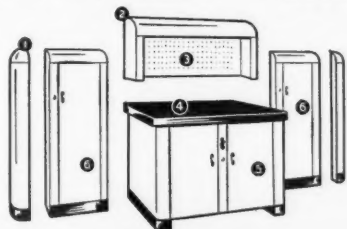
Take a Good Look at

KENT-MOORE'S NEW

SERVICE MERCHANDISER!



...Look at its important
"PLUS-VALUE" FEATURES!



Here it is, Dealers! Just what you've been looking for to snap up appearance and spark increased efficiency in your bustling service department. It's the new Kent-Moore Service Merchandiser . . . smartly styled, sturdily built, functionally engineered to provide maximum utility for your service operations. Yes, take a good look . . . at its gleaming white baked enamel

finish, its bright red trim. Bound to make a good impression on your service customers! Note its compact design, its sectional unit construction. Fits in almost any desired location, gives you complete flexibility of arrangement in single or continuous line installation. Check its rugged construction. Made of heavy gauge metal that'll stand up in use, take lots of abuse. Storage space? Plenty of it . . . on the center tool panel, in the big roomy end cabinets, and in the work bench itself. Doors swing freely, fit snugly, lock securely, too. And as for work bench surface area, just measure it. 48" wide by 30" deep, completely protected by a durable tempered Masonite cover. Now for price . . . the best news of all! So surprisingly low that you can't afford to pass it up. Act now! Write for complete information today!

- 1 **SECTIONAL UNIT CONSTRUCTION**—Permits unusual flexibility of arrangement to fit your particular service department. Sturdily built. Quickly, easily assembled.
- 2 **COMPACT, FUNCTIONAL DESIGN**—Completely assembled Merchandiser measures only 53½" high by 97½" long by 32" wide at bench. And nearly every cubic inch is useable storage or working area space!
- 3 **CONVENIENT CENTER TOOL PANEL**—Perforated to hold tool clips and hangers. (Roll-away aluminum curtain with lock, and fluorescent lighting, available as optional equipment.)
- 4 **LARGE WORKING SURFACE**—Measures full 48" long by 30" wide. Bench top completely protected by thick tempered Masonite cover. Deadens sound!
- 5 **COMPLETELY ENCLOSED WORK BENCH**—48" x 32" x 34". Plenty of storage space inside with provisions for optional drawers and shelving. Locking doors feature exclusive torsion bar hinge and frame construction for extra strength and rigidity.
- 6 **SPACIOUS END STORAGE CABINETS**—With perforated back and side panels for tool clips and hangers or for shelving. Exclusive torsion bar door construction.

... then look at its amazingly low price!

Kent-Moore
ORGANIZATION, Inc.

GENERAL MOTORS BUILDING • DETROIT 2, MICHIGAN

Engineers and Manufacturers of Special Automotive Service Tools and Equipment
Sales and Service Engineering Representatives in Principal Cities Coast-to-Coast

\$210⁰⁰

F.B. JACKSON, NICHOLAS

*Now Chevrolet Dealers
Leadership with...*



The Styleline De Luxe 4-Door Sedan

*FIRST...and Finest
...at Lowest Cost!*

You're FIRST with Chevrolet



plan to widen their

...THE NEW 1950 CHEVROLET

INTRODUCING CHEVROLET'S EXCLUSIVE NEW

POWER *Glide*

AUTOMATIC TRANSMISSION
OPTIONAL ON DE LUXE MODELS AT EXTRA COST

Here, in Chevrolet for '50, are the finest values Chevrolet dealers have ever offered to the motoring public.

These thrilling new Chevrolets are available in 14 surpassingly beautiful Styleline and Fleetline body-types. They bring buyers and prospective buyers a choice of two great engines with two great drives—the *Standard Power-Team* and the *Automatic Power-Team* (at extra cost). And they also combine quality feature after quality feature of styling, riding comfort, safety

and dependability ordinarily associated with higher-priced cars, but found only in Chevrolet at such low prices and with such low cost of operation and upkeep.

Chevrolet dealers report that people everywhere are pronouncing these new Chevrolets the smartest, liveliest, most powerful cars in all Chevrolet history. That means that again this year, as in years past, Chevrolet dealers have the car that is **FIRST AND FINEST AT LOWEST COST!**

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

...America's **FINEST** Franchise!

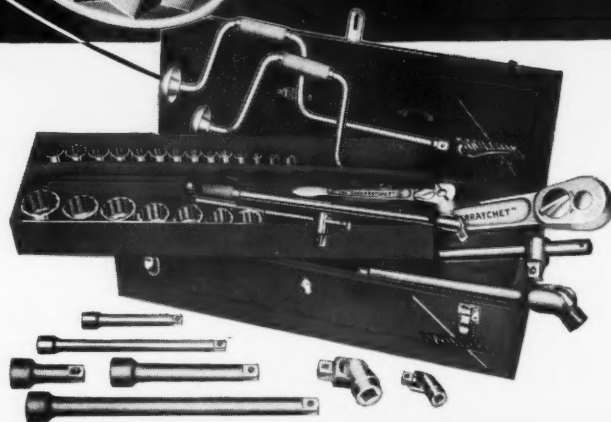


WILLIAMS SUPERSOCKETS

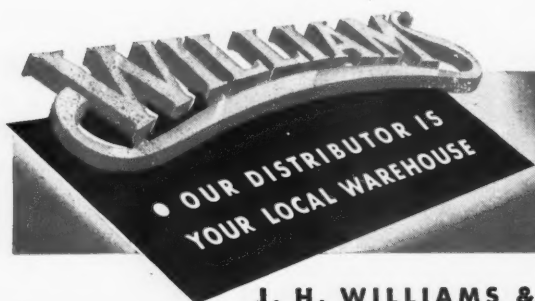


WORLD'S MOST FLEXIBLE WRENCH SYSTEM

The engineered flexibility of Williams "Supersockets" permits the combining of sockets, handles and accessories to create special wrenches for special jobs. Available in five different patterns, with drives ranging from 1/4" to 1" square, and with socket openings from 3/16" to 3-1/8". Write for Williams "Supersocket" Catalog A-50.



Set No. S-10 Complete in Metal Case, 36 Pieces
21 Sockets and 15 attachments



OPEN END, BOX, ADJUSTABLE & RATCHET WRENCHES, DETACHABLE SOCKETS & SETS; IMPACT SOCKETS; TOOL HOLDERS; LATHE DOGS; "C" CLAMPS; CHAIN PIPE TONGS & VISES; FLANGE JACKS; PLIERS; SCREWDRIVERS; PUNCHES & CHISELS; SOFT FACED "NUPLAFLEX" TIPPED HAMMERS; HOIST HOOKS; EYE BOLTS; THUMB SCREWS AND NUTS; BODY AND FENDER REPAIR TOOLS.

J. H. WILLIAMS & CO., AUTOMOTIVE DIVISION, BUFFALO 7, N. Y.



Barrett Announces

THE DRUM-Dokter

- ★ HANDLES ALL PASSENGER CARS Plus LIGHT AND MEDIUM TRUCK DRUMS!
- ★ AUTOMATIC IN OPERATION — NO EXPERIENCE NECESSARY!
- ★ ACCURATE — FAST — POWERFUL!

SELLS DRUM SERVICE! Only machine available that includes dial indicator for checking brake drums both before and after reconditioning. A SURE method of selling this profitable service.

MACHINES DRUMS! Produces a superior finish with Barrett's NEW Replaceable-Tip Carbide Lathe Cutter.

GRINDS DRUMS! Best and only way to finish drums with hard spots—an almost impossible job without a grinder attachment.

HONES DRUMS! Gives a mirror-smooth finish for shops that want to offer this extra-special service.

DOES MANY OTHER JOBS! Provides facilities for many other purposes—for driving all popular sized automotive reamers—for reconditioning hydraulic brake cylinders—for sharpening carbide and high speed lathe cutters—for resurfacing disc brake housings—for facing flywheel clutches.

3 Models Available

MODEL B-500 For Bench Operation

(Less Automatic Electric Motor Cut-off and Work Light Control System)

Only \$299⁰⁰ F. O. B. FACTORY

LOWEST PRICED BRAKE DRUM RECONDITIONER EVER OFFERED!

COMPLETELY VERSATILE!

Individual Attachments Available For All These Jobs:

GRINDING ATTACHMENT for hard drums. Produces a superior finish

HONING ATTACHMENT for an extra-special mirror-smooth finish

MICROMETER CHECKING for drum accuracy before and after reconditioning

TOOL SHARPENER for conditioning carbide and high speed cutters

HONE DRIVE for expert reconditioning of hydraulic cylinders

REAMER DRIVE & CHUCK for handling all popular sized automotive reamers

DISC BRAKE HOUSING ATTACHMENT for resurfacing housings of new type disc brakes

FLYWHEEL CLUTCH FACING ATTACHMENT for facing flywheel clutch surfaces

Now EVEN THE SMALLEST SHOP CAN AFFORD A DRUM-Dokter!

Reconditioning drums on only 1 car per week for 1 year brings you more income than the cost of a Model B-500 DRUM-Dokter! GROSS PROFIT IS 92%!

Mail Coupon Today ➔

BARRETT EQUIPMENT COMPANY

For World's Finest Brake Service Equipment

TWENTY-FIRST AND CASS

ST. LOUIS 6, MO.

**MOST USEFUL,
VERSATILE BRAKE
DRUM RECONDITIONER
EVER OFFERED!**



BARRETT EQUIPMENT CO.,
21st & Cass, St. Louis 6, Mo.

Send us complete details on the NEW DRUM-Dokter

Company _____

Street Address. _____

City & State. _____

Signed _____

Title _____

☐ Please have Representative call 61

Guide FOG LAMPS

UNIVERSAL Acceptance
UNIVERSAL Application
UNIVERSAL Satisfaction

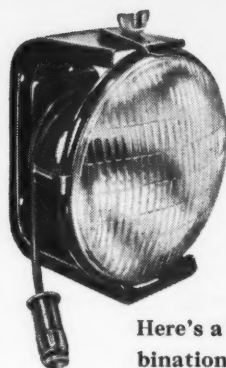
They're *good* because they're *Guide*—compact, durable, high-quality throughout—undoubtedly the highest development in the field of automotive optical science for the improvement of visibility during adverse weather conditions.

Packaged in pairs, with interchangeable mountings for attachment to splash pan, bumper bracket or front fender, Guide Fog Lamps fit *all* makes and models of cars and trucks.

And don't overlook the *profit* angle! Any item so universally accepted as a pair of Guide fog lamps can light the way to *profits* as well as to safety!



GUIDE LAMP—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



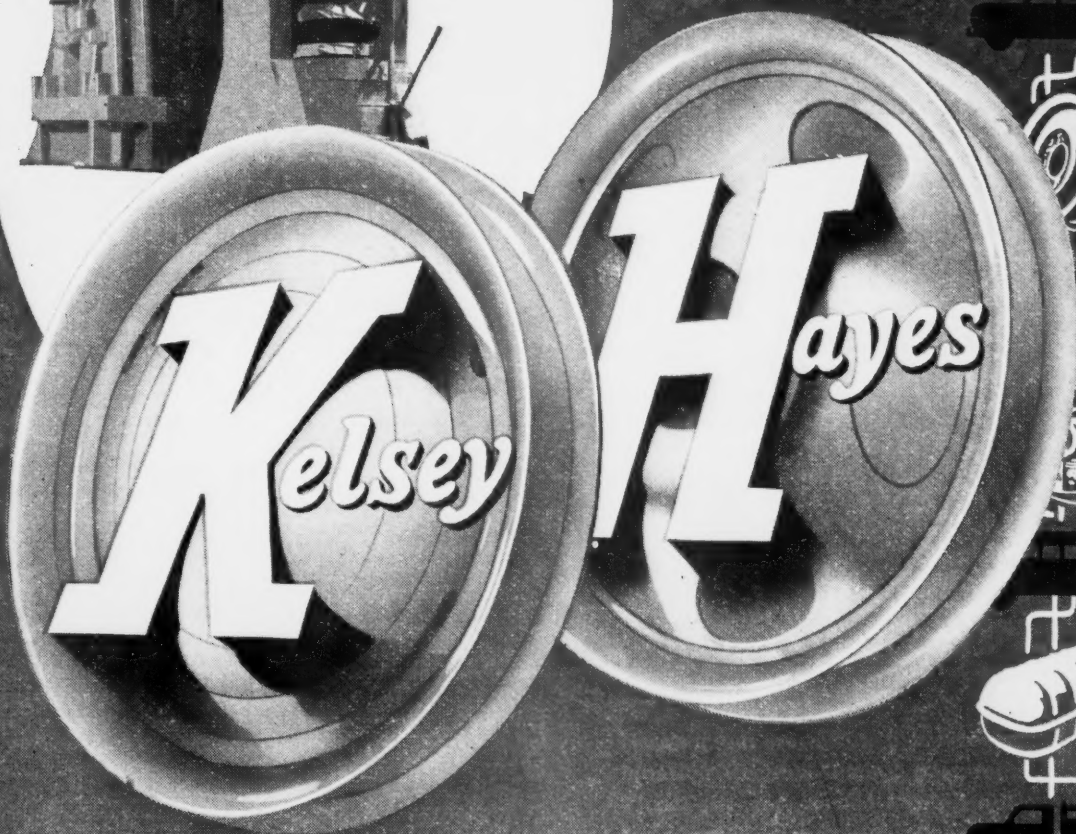
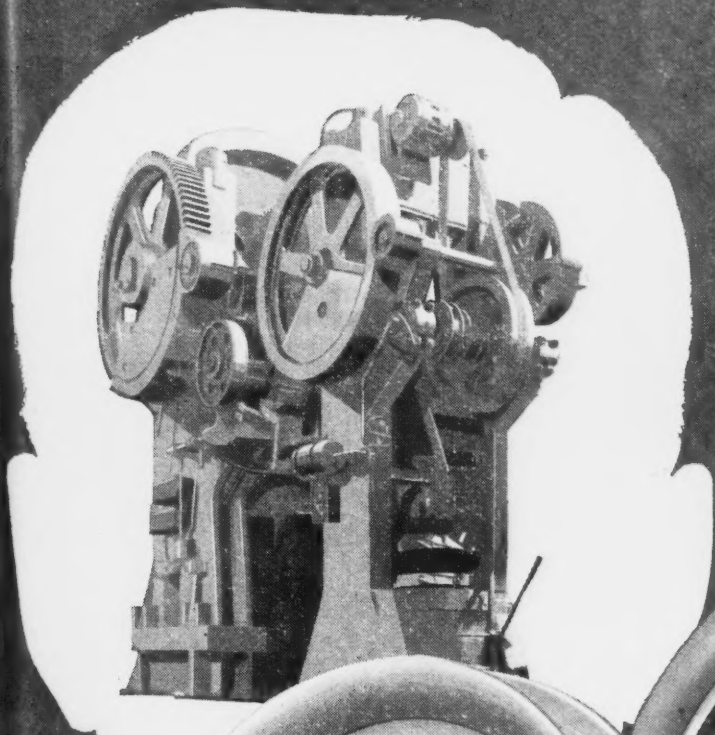
Guide
**MULTI-PURPOSE
LAMP**

Here's a four-way winner! It's a combination Trouble Lamp, Spotlamp, Floodlight and Sealed-Beam Headlamp replacement unit. Plugs into cigar lighter . . . just demonstrate it in some of your customers' cars and note how easily it sells itself!

Guide LAMP

Division of General Motors
Anderson, Indiana

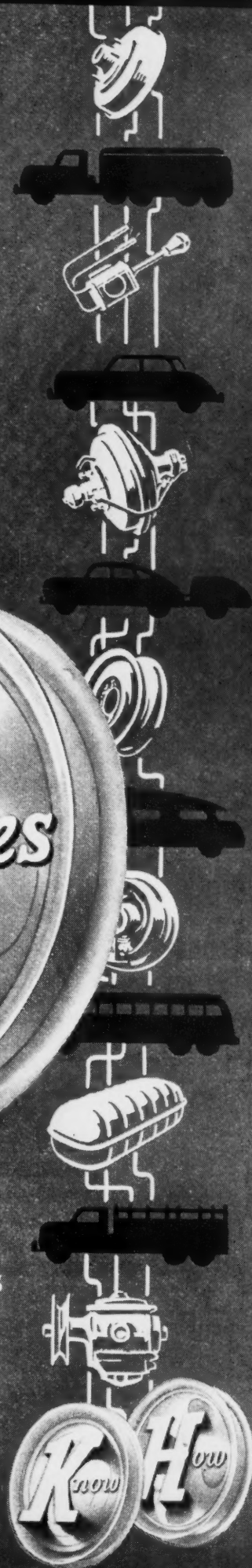




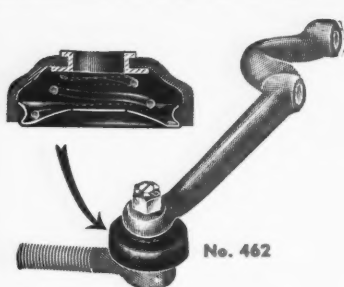
symbol of ***K*now *H*ow** for over 40 years

KELSEY-HAYES WHEEL COMPANY PLANTS:

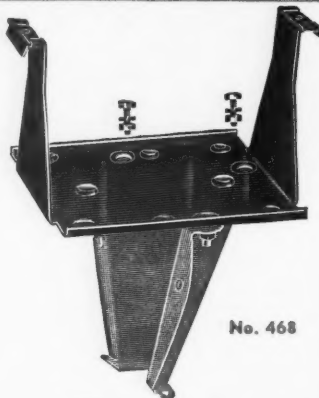
- Four Kelsey-Hayes Plants in Michigan
- McKeesport, Pennsylvania • Davenport, Iowa
- Los Angeles, California • Windsor, Ont., Canada



NEW SERVICE SPEED-UPS by CHAMP-ITEMS



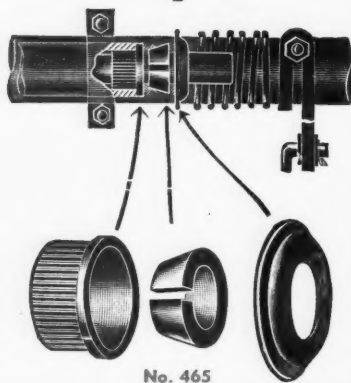
No. 462



No. 465



No. 404-K



No. 468

New parts that guarantee satisfaction. The kind of service that brings in more business and profits!

No. 462 STEERING LINKAGE KNUCKLE SILENCING CUSHION for all cars with conventional ball studs. Stops steering linkage noise and eliminates play at ball joint for more positive steering. List **\$.75** each.

No. 465 LOWER GEAR SHIFT TAKE-UP BUSHING for 1940-48 Chevrolet cars and trucks. Eliminates rattle of shaft and provides for an easier and more positive shifting. List **\$.75** each.

No. 468 BATTERY SUPPORT TRAY for Chevrolet 1940-48. Sturdy heavy gauge steel construction. Easily installed — no holes to drill. List **\$1.50** each.

No. 404-K UNIVERSAL SPEEDOMETER CABLE REPAIR KIT for all cars and trucks. Repairs speedometer cable for any car or truck in 10 minutes! Each kit contains necessary tools, cable and collars to repair about 25 units. Approx. list **\$1.50** per cable. Refill kit No. 404-RK available.

GET IT FROM



YOUR JOBBER

CHAMP-ITEMS, INC.

6101 Maple Ave.

St. Louis 14, Mo.

can you afford to

fly blind?



These days, you've got to know where you're going ... and where you've been. That goes for sales as well as history. For straight-away flight, wise business pilots depend on Polk New Car Sales Reports—to guide their entire sales picture.

Polk reports are based on official new car registrations. These facts are mighty useful in governing sales of replacement parts, predetermining the volume of service parts and accessories, establishing sales quotas and seeing to it you are getting your share of the market. Reports are available by county, state and nation; by makes; by price classes and by other valuable breakdowns. Write or wire for prices and types of reports today. You need these guiding facts everyday.

POLK NEW CAR SALES REPORTS

R. L. POLK & CO.

Serving the automotive industry and its dealers since 1923

MOTOR STATISTICAL DIVISION - 431 HOWARD STREET, DETROIT 31, MICHIGAN

Put new **PUNCH** in your service
with a "JACK-in-the-BOX"!



New **HEIN-WERNER**

4 ton G. A. C. double-acting push or pull HYDRAULIC UTILITY UNIT

for body and fender jobs... saves time... saves mechanics

When the lid of the sturdy steel chest is opened the Utility Unit and attachments pop up into sight—ready for use. It's the handiest tool on the market for fender and body repairing of passenger cars, trucks and buses.

You'll like this combination. It consists of a No. H-800 Remote Control Hydraulic Utility Unit, and No. 7-a Assembly

Parts—all for only \$108.00 (Western price \$113.40). The chest is \$19.75 extra (Western price \$20.75). This moderate investment "puts you in business."

Model H-800 "Junior" Utility Unit has a PUSH of 4-tons, and a DIRECT PULL of 2-tons. It operates in ALL positions. Positively will not become air bound.

For heavy-duty work Hein-Werner

G.A.C. Utility Units of 10 or 20 tons capacity, and a wide variety of attachments, are immediately available. Unsurpassed for repair jobs such as Body Alignment, Frame Work, Box Channel, Fender Straightening, Rear Axle Housing Jobs, Bumper Straightening, Knee Action Adjustments, and Front Axle Straightening.



HEIN-WERNER also manufactures Bumper-Lift Hydraulic Jacks for passenger cars, Under-Axle Jacks for trucks and buses... Service Jacks for shop use. Ask your jobber or write us for details.



HEIN-WERNER CORPORATION • WAUKESHA, WIS.

MOTOR AGE, February, 1950

NEW DE SOTO GETS TERRIFIC WELCOME FROM CAR-BUYING PUBLIC

ANNOUNCEMENT day was January 10... and the magnificent New De Soto won immediate acclaim from hosts of enthusiastic admirers.

Since then the New De Soto has risen still further in the public's estimation... for they're finding in this great car everything they want in smart styling, ease of handling, and riding comfort.



Tune in the GROUCHO MARX SHOW, "You Bet Your Life," Every Wednesday Night over all CBS Stations.

MINIMUM EFFORT...

MAXIMUM SALES!



**WITH WEATHERHEAD'S NEW
DASH CONTROL MERCHANDISER
D-24**

Faster turnover on your dash control business is guaranteed by the new "Dee Cee" Merchandiser. BECAUSE . . . this well-designed merchandiser was built for eye-appeal, for plus sales. The "Dee Cee" Merchandiser is sturdily constructed of heavy gauge wire. It holds 24 assorted, complete dash controls, yet is compact enough for your counter or show window. The Weatherhead Dash Control Assortment includes 6 different types and colors selected to blend with any instrument panel. All controls are complete with conduit and wire.



FOR

Dealers • Service Stations • Garages

Contains 24 assorted, complete controls. Sturdy, lightweight metal construction. Size 14 1/4" long, 22" high, 11" deep.

ORDER WEATHERHEAD MERCHANDISER D-24 TODAY!

TWO MORE VOLUME BUILDING MERCHANDISERS



The "double F" Farm and Field Merchandiser FF94 contains a balanced assortment of fittings and hose for farm and field equipment.

The "Shelf Master" fuel line assortment H275 contains a complete stock of types and sizes of fuel lines for cars, trucks and tractors.



Look Ahead With

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO

Plants: Cleveland, O. Angola, Ind. Columbia City, Ind. St. Thomas, Ontario, Can.

"Wouldn't Consider Using Other Lubricants!"

Says a
LINCOLN-MERCURY DEALER
WHO PREFERS
D-X MOTOR OIL

D-X is the preferred motor oil with Bloomington Lincoln-Mercury, Inc., in Bloomington, Indiana. Read what the Company's president, R. W. Sims, has to say:

Lincoln
Mercury

BLOOMINGTON LINCOLN-MERCURY, INC.
BLOOMINGTON, INDIANA

"Mid-Continent Petroleum Corp.
Tulsa, Oklahoma
Gentlemen:

Since 1929, I have been a distributor of D-X Products. Within this period my operations consisted of retail service stations, truck fleets, and at present includes my Lincoln-Mercury dealership here in Bloomington."

"Public acceptance generally has been such that it has enabled me to purchase D-X motor oils in carload lots over a period of more than ten years. During this time different oil companies have had me try their motor oils, but none compared in quality with D-X."

"In view of all this, I would not consider using or merchandising any other brand of lubricants."

Very truly yours,
**BLOOMINGTON
LINCOLN-MERCURY, INC.**

R. W. Sims
R. W. Sims
President

RWS:mh



If you are located in the Middle West, this top quality motor oil will help you give your customers extra lubrication protection and more satisfaction. Write for details about a profitable D-X Franchise today.



MID-CONTINENT PETROLEUM CORPORATION
TULSA, OKLA.

Waterloo, Ia. Terre Haute, Ind. Chicago, Ill.
Omaha, Nebr. Minneapolis, Minn.

One Wheel needs to be **STRAIGHTENED**

on every car that drives in

5 wheels a day @ \$2.50... \$12.50
less one hour labor..... 2.50
Gross Profit per day \$10.00

Bee-Line

WHEEL STRAIGHTENER

Modern in design, with 20-ton frame capacity! No extra tool board is required. The famous Bee-Line Universal Hub provides a full universal method, reducing the need for purchasing additional equipment for servicing new-model wheels.

\$590.

FOB Davenport, Iowa

When you think of
★ STRAIGHTENING
★ BALANCING or
★ ALIGNING *think of*

Bee-Line co.
DAVENPORT, IOWA U.S.A.

Write For Complete Information today!

GET RID OF GAS FUMES

Solve Your Garage and Shop Ventilation Problem This Simple Inexpensive Way

What you have been waiting for—the final, successful solution to your garage ventilation problem all available in a packaged kit, including motor and blower, ready to install.

- Removes gas fumes at source (exhaust pipes).
- Simple installation—no change or alteration of existing facilities.
- Not in your way—instantly in use or out of way when you don't need it.
- Saves man-hours and helps keep employees. Mechanics have less sinus, headaches, etc.

National also makes a complete packaged kit for underfloor installation. Literature on request.

Complete packaged kit
F.O.B. Decatur

\$187.50

Write for circular
Illustration shows standard kit with two extra tube outlets.



Write for circular.

THE NATIONAL SYSTEM OF GARAGE VENTILATION
DEPT. 321, 330 N. CHURCH ST., DECATUR, ILL.

World's Largest Manufacturer of Exclusive Garage Ventilating Equipment.

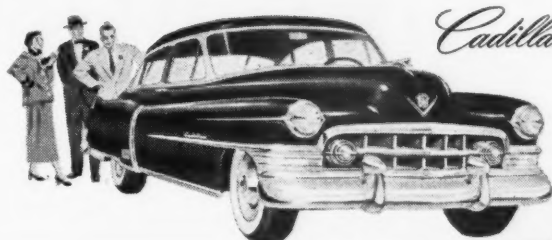
"Keynotes" for 1950 Sales

Note that GM leads the style parade again.

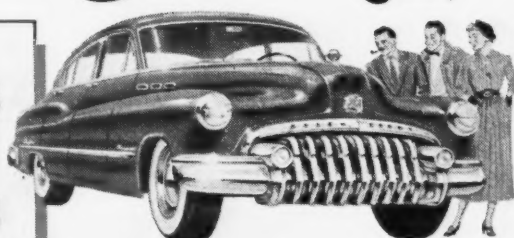
Note that it leads engineering, too, with truly automatic drives available on all GM cars.

Note this smashing presentation of the entire line in national magazines—usually as a big, full-color spread.

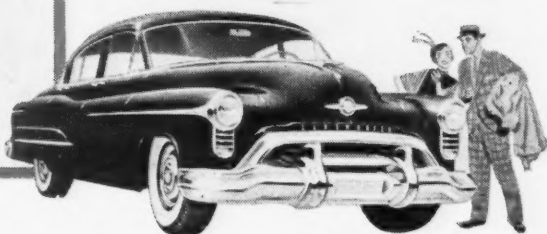
Then—note sales of GM cars as 1950 rolls on in show-rooms from coast to coast!



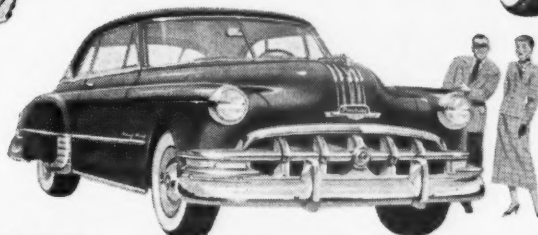
Cadillac



Buick

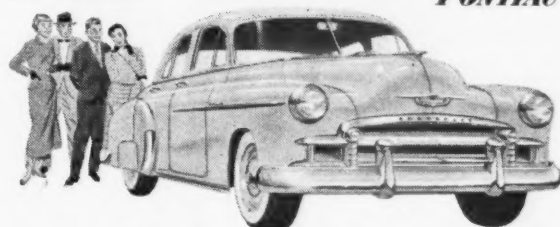


OLDSMOBILE



CHEVROLET

PONTIAC



THE KEY TO A GENERAL MOTORS
Greater Value

"MORE AND BETTER THINGS FOR MORE PEOPLE"
GENERAL MOTORS

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC • BODY BY FISHER • GMC TRUCK & COACH

Hear HENRY J. TAYLOR on the air every Monday evening over the ABC Network, coast to coast.

GENERAL MOTORS Presents The Key Values for 1950



Spinach

A more tender product obtained in spring than in winter.
1. Cut when leaves are tender.
2. Wash thoroughly in running water to rid leaves of dirt.
3. Steam-blanching in boiling water for 2 to 3 minutes. So water-blanch about a time for 2 1/2 minutes. Basket of colander up to boiling water constantly. Drain and squeeze out water. Pack in any type of freezing container.

Peas

Then as Huxley is a variety for freezing. From new variety which is in regions where they may be difficult to grow. Any deep green, large garden variety will be frozen product.
1. Do not freeze old, tender, slightly immature are better for the freezer.
2. Pod 4 or 5 pounds. Do not wash after picking.
3. Water-blanch about a time. The time depends on size of peas. Blanch small peas, 2 minutes; large peas, 3 minutes. If you prefer to steam peas, small peas will do; large peas, 2 minutes.
4. Chill immediately in running water 3 minutes.
5. Fill any type of vegetable container full, cover. Freeze immediately.

UTTER HOMES & GARDENS



"For top performance at less cost per mile—I use SUNOCO DYNAFUEL"

That's the Sunoco Dynafuel story in a nutshell as oil-burner serviceman Lawrence Bennetzen of Ramsey, New Jersey sees it. And backing up his testimony is the proof shown below.



PITTSBURGH TESTING LABORATORY
ESTABLISHED 1911
INDUSTRIAL RESEARCH DIVISION
STEVENSON AND LOCUST STREETS
PITTSBURGH, PA.

August 29, 1949

Sun Oil Company
1608 Walnut Street
Philadelphia 3, Pa.

Subject Anti-Knock Distribution Tests
Dynafuel vs. Premium-priced Gasolines

Gentlemen:

We have examined and hereby certify to Report No. A-9 of your Research and Development Department covering the anti-knock distribution tests in which Sunoco Dynafuel was compared with seven (7) leading premium-priced gasolines.

These tests were made under our supervision, using samples of premium-priced gasolines purchased by us at retail service stations in Philadelphia, Pittsburgh, Cleveland, Boston, and Detroit.

Sunoco Dynafuel proved superior to all seven (7) premium-priced gasolines — in uniformity of anti-knock performance in all cylinders — as measured by the ASTM Standard Motor Method.

Very truly yours,
PITTSBURGH TESTING LABORATORY
Lawrence K. Jones
Lawrence K. Jones,
Manager - Special Test Section

Sunoco Dynafuel beats leading premium gasolines in tests for smoother anti-knock performance in all cylinders!

**SUNOCO
DYNAFUEL**

There may be a Sunoco Franchise available in your neighborhood. Write Sun Oil Company, 1608 Walnut St., Phila. 3, Pa.

IMPORTANT ANNOUNCEMENT!

FOR A LIMITED TIME ONLY, we are offering you a Special Deal at a greatly reduced price and added profit! In addition, this Deal can make you the Tire Pressure Expert of your community. National advertising will direct customers to *your* door to get (1) ease of steering; (2) riding comfort; (3) safety with long, trouble-free tire mileage. You get *new* customers, build *repeat* customers.

Here's All You Have To Do:

1 Memorize this formula for gauging pressures in "Hot or Cool Tires."

- a Hot tires result from steady driving, causing a normal air pressure build-up above the recommended cool tire pressure. In City driving it is 3 lbs. In Highway driving it is 5 lbs.
- b Cool tires result from standing still for at least two (2) hours, after which they may reach your station travelling only a short neighborhood distance with no extra pressure build-up.
- c All you need to remember then is the "3" and "5" and what they represent when air servicing tires.

This simple formula, plus the easy instructions found in the Deal Unit, qualifies you as the air expert in your community.

2 Order NOW this Special Profit-Deal Unit containing:

- a A Master Gauge—to check the accuracy of "every day" tire pressure gauging devices.
- b 200 new Pressur-Tel Buttons—assorted numerals serve as proper air pressure reminders.
- c 200 No. 880 Valve Caps—to guarantee against air loss through valve stem.
- d 10 No. 5050 Passenger Tire Gauges for your customers' personal use.

These Products, Purchased Separately, Would Cost You	\$23.70
Total Unit Costs Only (For Limited Time)	19.50
Saving You	\$ 4.20
Total Resale Value For You	\$32.50
Total Cost To You	19.50
Total Profit (On \$19.50 Invested)	\$13.00

**AND YOU OWN
THE MASTER GAUGE**

PLUS: Window Streamers, Counter Leaflets, Mailing Pieces (in the unit) and powerful National Advertising urging people to come to you as the qualified Tire Pressure Expert in your community.



Complete Unit For No. 4471 Deal



Master Gauge



New Pressur-Tel Button

Valve Cap



Glove Compartment Gauge

**CALL YOUR SUPPLIER NOW
OR MAIL THE COUPON TODAY TO—**

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

BROOKLYN 17, NEW YORK

A. SCHRADER'S SON, Brooklyn 17, New York

Send me at once the No. 4471 Unit as described at \$19.50.

Name _____

Address _____

City _____

State _____

My supplier's name is _____

Address _____



Talk

No other Agreement can match the

DODGE • PLYMOUTH •

about **VALUE**

means talk about

DODGE

Perhaps YOU should
be a DODGE Dealer!



Dodge TRIPLE PROFIT Opportunity...

For full information write E. C. Quinn, General Sales Manager,
Dodge Division of Chrysler Corporation, 7900 Jos. Campau, Detroit 11, Michigan

DODGE “Job-Rated” TRUCKS

Chilton Automotive Lists

CHILTON AUTOMOTIVE LISTS contain nearly 170,000 names.

More than 130,000 changes are made on these lists each year.

More than 35,000 names are dropped and added.

More than 50,000 names and addresses are changed.

Approximately 75 people work on them constantly, using every known means of mailing-list maintenance, from personal calls to clipping services.

CHILTON AUTOMOTIVE LISTS cover the major divisions of the automotive industries:

Car Dealers

Truck Dealers

Combination Car and Truck Dealers

Independent Repairshops

Automotive Wholesalers

Truck Fleet Operators

Automotive Industrial Executives

Mailings to these lists guarantee direct mail users the highest possible percentage of delivery to individuals and outlets in business today at the addresses supplied.

Such results are the reason for the almost universal use of **CHILTON Daily-Corrected LISTS** by large and small users of Direct Mail throughout the various branches of the automotive industries.

Write for free data file.

Direct Mail Division

CHILTON COMPANY



Chestnut & 56th Sts.

Philadelphia 39, Pa.

Starting Feb. 11....

VALVOLINE

National Advertising goes into high gear with a

NEW - BIGGER CAMPAIGN in

Every
Valvoline
Ad Reaches
15,702,000
Readers!



- ✓ Watch for this new campaign, featuring action-photos of popular sports . . . month after month!
- ✓ Sell the oil that "Stays in There Pitching." 1949 was a big year for our dealers — '50 will be bigger. Join the profit parade now.

VALVOLINE

100% Pennsylvania
MOTOR OIL

FREEDOM-VALVOLINE OIL COMPANY, Freedom, Pennsylvania — New York • Toronto • Pittsburgh • Jacksonville
Atlanta • Detroit • Cincinnati • Chicago • Los Angeles • San Francisco • Portland • Seattle • Vancouver, B. C.

are businessmen

COLD-

BLOODED?



OF COURSE NOT! Literally, their normal body temperature is 98.6—same as laborers, engineers or any other group of people. And, figuratively, they're no more, or no less, cold-blooded—as a group.

We all know unreasonable generalizations can be dangerously false. Common sense and on-the-job experience show us the value of dealing specifically with ideas, problems—and *people*.

Let's not make the big—and costly—mistake, then, of generalizing on religious or racial groups. Adopt and *carry out* these common sense principles:

1. Accept—or reject—people on *their individual worth*.
2. Don't listen to or spread rumors against a race or a religion.
3. Speak up, wherever we are, *against* prejudice. Work for understanding.



Published in the public interest

**SELL THE FILTER
THAT
SELLS ITSELF**



**DUREX
GASOLINE FILTER**

Your customers may wonder that gasoline can pass through this solid-looking Durex all-metal filtering element, but no one will wonder that particles of dirt can *not*. The all-metal element is an effective sales talk in itself . . . it tells your customers, plainly and forcefully, that here is a filter that can't fail.

Because it is all-metal—composed of myriads of tiny bronze spheres firmly moulded and bonded together—the element is tough and durable, never needs replacing. It is easy to remove and to flush clean, good as new. And it passes nothing but gasoline—every particle of dirt and lint is stopped cold.

It's these extra values in the filtering element that lead customers to prefer the Durex filter—and low price and easy installation clinch the sale. We suggest that you stock and display Durex Gasoline Filters—for to show them is to sell them.



Durex Gasoline Filters are distributed nationally by United Motors Service. Order a supply from your local distributor.

MORaine PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION, DAYTON, OHIO

THE *Modern* WAY
TO CLEAN METAL PARTS

NO BRUSHING
NO SCRAPING
NO HEATING



Why use old-fashioned methods when Bendix* Metalclene parts cleaner is the ideal solution? Use it anytime without heating! Just dip—don't scrub—and parts are as clean as new! It lasts and lasts for real economy! It's the modern way to clean all metal parts and tools. Order a supply today.

*REG. U. S. PAT. OFF.

BENDIX PRODUCTS DIVISION of

SOUTH BEND 20, INDIANA



Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

BUILD . . .
a Reputation
for Quality Service

with
NIEHOFF
Automotive Products

Available through your Niehoff Jobber



C. E. NIEHOFF & CO.

4920 Lawrence Ave.

Chicago 30, Illinois

BRANCHES: BOSTON 34, MASS., 254 BRIGHTON AVE.; LOS ANGELES 15, CALIF., 1330 W. OLYMPIC BLVD.; NEW YORK 19, N. Y., 250 W. 54th ST.

The Best in Ignition!

Now . . .

from

1

SOURCE

LEAF SPRINGS

COIL SPRINGS

FRONT END PARTS

TUTHILL

Quality Since 1880



Specify TUTHILL and get coil springs and leaf springs skillfully engineered of finest alloy steel, heat treated and tested to insure many years of additional service, on all cars and trucks. Coil springs perfectly matched in pairs.

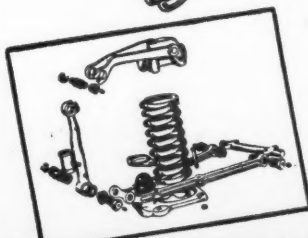
Now Available!

**FRONT END WHEEL
SUSPENSION PARTS**

A complete line for all cars. Includes coil spring spacers, stabilizer repair kits, upper & lower pivot kits, control arm assemblies, knuckle supports, king pins, etc.

Ask your **JOBBER**

OR WRITE FOR CATALOG AND PRICES



TUTHILL SPRING CO.

760 W. POLK ST. · CHICAGO 7

MORE PROFIT!

No matter how small your shop, you can make auto glass replacements pay off by doing your own grinding and polishing. Keep all the profit right in your own shop! This complete, quality-built, low-priced unit will return its cost to you in a few short months.

SOMACA

BM-64-WB13

WET ABRASIVE BELT

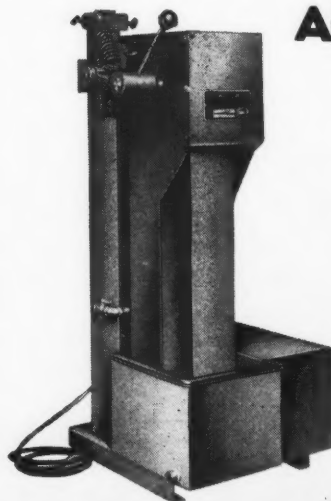
**AUTO GLASS
EDGER**

Bench Mounting Style

Designed especially for shops that do not have a continuous high volume of auto glass work. Two wet abrasive belts 64" long and 4" wide—one No. 80 and one No. 220 Grit. Quick-action idler pulley and belt take-up mechanism. Built-in water tank. V belt drive—ball bearing equipped. Complete with 1/3 H.P. motor—ready to operate from any 110 volt outlet.

F.O.B. Chicago. \$125.00

Write for Supplementary Catalog.



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Automotive Department

3624 SOUTH OAKLEY AVENUE

CHICAGO 9, ILLINOIS

OLDSMOBILE ROCKETS

TO RECORD-BREAKING PEAKS OF PUBLIC ACCEPTANCE!

Never before
in Oldsmobile experience
have New Models inspired
such enthusiastic reception!

From that first gala day when they went on display, the new 1950 Futuramics have proved a national sensation. Crowds . . . enthusiasm . . . *showroom traffic* . . . have shattered all Oldsmobile records. But the biggest raves of all have been saved for the cars themselves! "Rocket" Engine cars—with the most-talked-about power plant ever built! Whirlaway Hydra-Matic cars—with a brand new achievement in transmissions—another Oldsmobile first! And Futuramic cars, of course! Cars with a thrilling new Fisher Body for the ultimate in interior comfort and glamor! "98!" "88!" "76!" They all took America by storm! And each of these new Futuramics offers incredible value. For example: The brilliant new "88" Oldsmobile now comes at a new, even lower cost! That's one more solid reason for the remarkable public response to Oldsmobile's magnificent new models. And that's one more reason why Oldsmobile dealers everywhere are ready and eager to—"Rocket Ahead with Oldsmobile in 1950!"

Typical Dealer Reaction to the New "Rocket" Cars!

"Finest showing in Oldsmobile history!"—HARRISBURG, PENN.

"4000 people crowded through showrooms in past 48 hours!"—OAKLAND, CALIF.

"Best looking car on the market—Head and shoulders above competition!"—CHICAGO, ILLINOIS

"Showroom jammed with more than 3,000 excited Denverites!"—DENVER, COLO.

"All 1950 models superb. Demand for new cars terrific already!"—PORTLAND, OREGON

"Greatest reception in 18 years—The new Futuramic fleet is a sensation—Congratulations!"—PATERSON, N. J.

"What a car—what a year 1950 will be for Oldsmobile dealers and salesmen—Crowds tremendous—Police called to regulate traffic!"—CANTON, OHIO

"1800 people in two-day showing—marvelous reception of outstanding car of 1950!"—SAN FRANCISCO, CALIF.



A General Motors Value

ROCKET AHEAD WITH OLDSMOBILE!

MOTOR AGE, February, 1950

BOWES—Offers Opportunity to Go In Business for Yourself

● Valuable Franchises are available now for distributing nationally advertised BOWES "Seal Fast" quality automotive products and equipment in assigned territories.

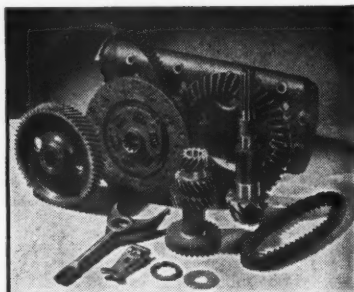
Reasonable investment is necessary for inventory and business equipment to properly serve dealers, a background of sales experience will be helpful.

A BOWES Franchise offers a qualified man, following factory training, an unusual opportunity to build a profitable business of his own. For more information, send full details about yourself to—

BOWES "SEAL FAST" CORP.
226 N. PINE ST., INDIANAPOLIS 7, IND.



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PARTS**
are
Certified to excel



PERFECTION GEAR CO.
HARVEY, ILLINOIS

SPRINGFIELD



Top Quality



**TUNGSTEN CONTACTS
AND CONDENSERS**

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**YOU WILL FIND READY SALES FOR
HULL AUTOMOBILE COMPASSES
BECAUSE THEY ARE SO WELL KNOWN**

Without fail, every month for 15 years, millions of people have read about Hull Automobile Compasses in their favorite national magazines. This unusual example of strong, consistent advertising is one of the reasons the demand for Hull Compasses has never stopped increasing, in good times or bad.

HULL MFG. CO.
P. O. Box 248-MA2, Warren, Ohio
Send me information and prices on the Hull Compasses.

NAME
Check: ☐ Dealer ☐ Chain Store ☐ Jobber
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CITY **STATE**

**A BEACONLITE
ILLUMINATED**
List Price \$5.95

**B STREAMLINE
STANDARD**
List Price \$3.95



Classified Advertisements

Profit \$25,000.00 year can be proved by income tax. Wholesale and retail automotive parts, batteries, electrical sales and service. One of the best and largest automotive businesses on the West Coast of Florida. Owner retiring. Price \$85,000.00. This will stand the most rigid investigation. Jim McGinty, Business Opportunity Broker, 647 Central Ave., St. Petersburg, Fla.

SALESMEN WANTED—For salesmen now calling regularly on automobile repair shops, auto dealers or radiator repair and body shops, we have a very acceptable, nationally advertised product which can be handled as a side line and which, without much effort or interference with other lines handled, could add substantially to your income each month. We are established manufacturers well rated by Dun & Bradstreet. Write describing territory covered and present products handled. Replies held in strictest confidence. Address General Sales & Supply Co., 740 Williamson St., Madison, Wis.

LINES WANTED—Midwest manufacturer and distributor of a few products in the auto accessory and equipment field is interested in additional lines or products for distribution to automotive trade. Company is established, aggressive, fast growing organization and well rated by Dun & Bradstreet. Address General Sales & Supply Co., 740 Williamson St., Madison, Wis.

SEAT COVER SALESMEN WANTED—New auto seat cover manufacturer is setting up a national sales organization. We are looking for men who can sell custom fibre and plastic seat covers on commission. We are not necessarily interested in men who can sell only to jobbers. We are interested in men who can also sell to dealers and stores. All territories will be absolutely protected. Please, in your first letter specify your territory, lines now carried, and a short survey of your sales experience. Box 10 MOTOR AGE, 5601 Chestnut St., Philadelphia 39, Pa.

MOTOR AGE

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Is the Highest

of Any Other

MONTHLY

AUTOMOTIVE

MAGAZINE



Set of four
\$2.98

DEALER'S
NET PRICE

Sold by
all leading automotive jobbers.

No. 234

TRADE MARK Smash-Proof CREEPER CASTERS

CAN BE USED FOR REPLACEMENT ON
ANY CREEPER OF CONVENTIONAL DESIGN

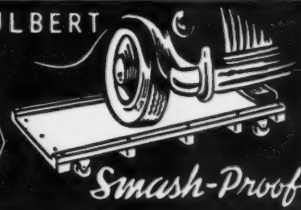
Has the rolling ease of a caster wheel 8" in diameter. Wheel is case-hardened steel. Tremendously strong—will take a load of one ton per caster. A creeper equipped with these seems to float over rough or uneven floors!

WEIGHT—only 10 $\frac{1}{4}$ ozs. per
caster.

HEIGHT—2 $\frac{1}{4}$ inches. Same as
ordinary creeper
casters.

HULBERT MANUFACTURING CO. • Ashtabula, O

HULBERT



NOW A WRITTEN
GUARANTEE
WITH EVERY
AMKO
WATER
PUMP

Guarantee..

NEW DESIGN
CONSTRUCTION
ENGINEERING

AMKO Pumps are Tops in Quality. New Design with New, Improved construction methods and Precision Engineering under exact supervision in our own plant enables us to give this written Guarantee with every pump to protect your customers.

Every AMKO Pump duplicates Original Equipment and their installation is an easy and simple job. BELLOWS EQUIPMENT TYPE SEAL WITH THICK CARBON WASHER—VACUUM TESTED. Write for catalog and price list.

We make a complete line of FRONT END PARTS, UNIV. JOINTS, KING BOLTS & SPRING SHACKLES.

ALL PRODUCTS SOLD THRU JOBBERS ONLY

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General Offices and Warehouse
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**No
Spark
Plug
Is
Stronger
Than Its
Insulator**

You can depend on
**FRENCHTOWN
INSULATORS**

- used by more spark plug manufacturers
than any other make

FRENCHTOWN PORCELAIN CO.
8 MUIRHEAD AVE. TRENTON 9, N. J.

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Sherlock Holmes
and Dr. Watson



WINNING COMBINATIONS

YOU and UNITED MOTORS LINES

For our part, here's what we bring to the *winning combination*: products that are used as original equipment on the country's leading cars, trucks and buses; products that are in use on so many *millions* of vehicles today that the parts-and-service potential is almost limitless; products whose preferential position insures a strong and continuing market, month after month, year after year. If you are interested in a *permanent* business, with year-round profits, talk to your United Motors distributor, or write directly to us.

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and Rebuilt Fuel Pumps
DELCO Auto Radios
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Lighting and Ignition
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HARRISON Radiators
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DELCO Hydraulic Brakes

UNITED MOTORS SERVICE
Division of General Motors Corporation
General Motors Building, Detroit 2, Michigan





Shouting "Value" for all to hear...

New, Lower-Priced Hudson Pacemaker is the Dealer's Kind of a Good Deal!

YOU'LL find there's a lot more to 1950 than just another new year. You'll find a whole new market . . . new buying habits . . . new ideas about more value per dollar.

That's why the new Hudson Pacemaker is America's new sweetheart. For here's the one completely new car in the field . . . offering BIG-CAR advantages at a competitive, lower price.

Better yet, the Pacemaker offers distinctive features and plus values not found in any other make at any price, high or low. Nowhere else does the buyer find "step-down" design, its lower center of gravity, its superb hug-the-road ride, its stability, and its un-

matched roominess. There's a completely new high-compression Pacemaker engine, too, that takes off like a comet yet has saving ways.

Above all, the buyer gets design that *really captures the eye*—the new Pacemaker has sleek, smooth style, without meaningless bulk.

Do YOU want to sell an automobile that is *right* for the 1950 market in every way, and that's going like a house afire *right now*? Then write, wire, or phone Mr. N. K. VanDerzee, Vice President in Charge of Sales, Hudson Motor Car Company, Detroit 14, Michigan. Hudson has a *good deal* for good dealers, and the facts prove it. Get them today.

40 YEARS OF ENGINEERING LEADERSHIP

A few of the more than 80 important advances pioneered by Hudson

- 1909 Fluid-Cushioned Clutch
- First Super-Six, high-compression engine with compensated inherently balanced crankshaft
- 1916 First steel bodies built on a production basis in own manufacturer's plant
- 1926 Gearshift control at steering wheel
- 1935 Patented Triple-Safe Brakes (hydraulic and reserve mechanical systems from same pedal, plus parking brake)
- 1936 Monobilt body-and-frame*, an all-welded unit with recessed floor and exclusive "step-down" design
- 1948 Super-matic Drive—no-shift driving, economical overdrive
- 1949

Go Places with HUDSON . . . the Great Pioneer!

*Trade-mark and patents pending

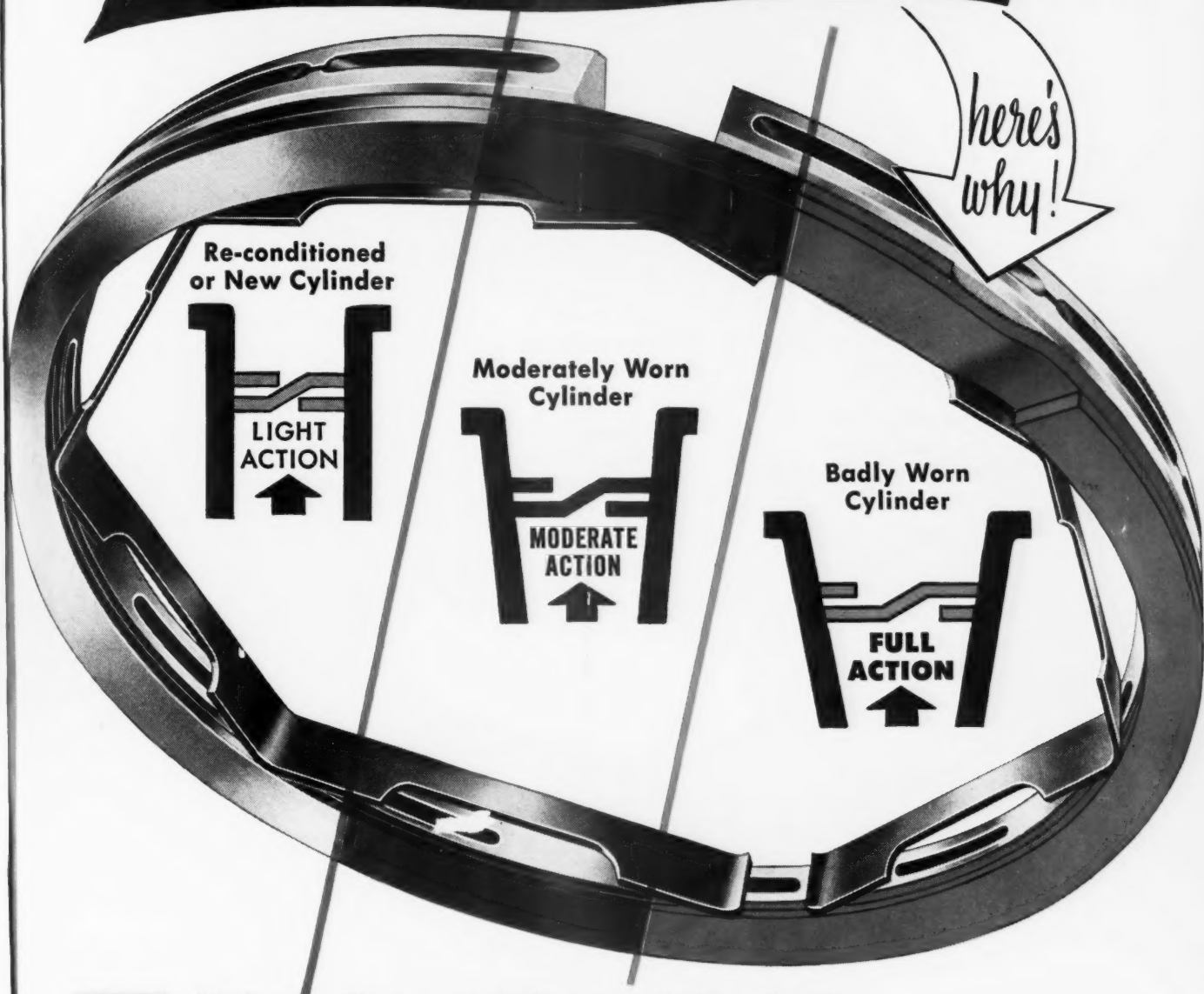
New HUDSON for 1950

3 GREAT HUDSON SERIES

ONLY CARS WITH STEP DOWN DESIGN



AUTOMATICALLY ADAPTS ITSELF
...to every cylinder condition



Unique, Patented Ramco Spiro-Seal Changes Action Automatically!

Spiro-Seal is the No. 1 reason why Ramco 10-Up Ring Combinations are *genuinely All-Purpose* in application. One look at the Ramco 10-Up Oil Ring with Spiro-Seal will tell you that here is a ring truly different. That difference... that *continuous* steel spiral ring... has an action that is unique! It delivers **FULL ACTION** when cylinder walls require it... yet is practically **ACTION-less** when installed in a new or re-bored cylinder.

So you are always safe when you Re-Power with 10-Up. No matter what the condition of the cylinders, you are sure to do the job right. Proof is that any Ramco Re-Powering Job can be guaranteed both as to **RINGS** and **LABOR** for 10,000 and Up Miles. That's why they're known everywhere as 10-Ups!! See your Ramsey Jobber and install a set in your next job. Ramsey Corporation, St. Louis, Missouri.



Year after Year, Better and Better, Yet, **UNCHANGED IN BASIC DESIGN** Since Originated by Ramco Many Years Ago...

RE-POWER WITH RAMCO 10up
ALL-PURPOSE PISTON RINGS

Unchanged except for the Better through continuous engineering perfection of detail. No obsolescence loss or risk of performance disappointment due to frequent design changes.



The One and Only

Thermoid Custom-Built Brake Lining is the one and only brake lining carrying the famous Pittsburgh Testing Laboratories Seal... certifying that "the lining in the package is correct for the brakes with which the car specified is equipped." Thus, with Thermoid Custom-Built Brake Lining you eliminate all guess-work and give your customer "the safest thing on wheels." Ask your Thermoid distributor about CB Sets and Thermoid Precision Processing Equipment, which guarantees a top quality relining job every time.

Watch for "The Safest Thing on Wheels" Thermoid's instructive new talking movie. Your Jobber will inform you when this Film will appear in your locality.

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